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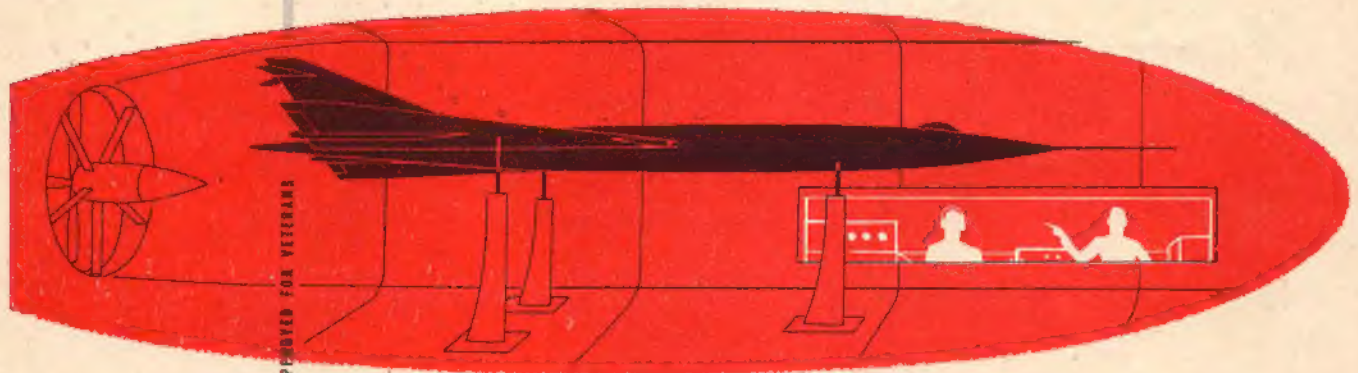
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Comes Christmas Eve and what dances through the heads of many a model builder? Visions of a scene like this, we'll wager. If there is any special phase of modeling or hobby activity that artist Harold Stevenson has left out you'll find it in that red-striped package.

Young Men

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The Readers Write

Let's hear from you! Address all letters to the Editorial Office, YOUNG MEN, 304 East 45th Street, New York 17, N. Y.

Jet Mechanic Instructor Speaking . . .
I have one correction to make in your 1955/56 Air Progress. On page 57 you state that the J-33 is the only centrifugal compressor jet engine in production in the U.S.A. Since this is my business (jet engines) I'd like to bring before you the case of the Pratt & Whitney J-48. This engine is used extensively by the Navy and in the Air Force F-94C with an afterburner. I am a jet engine mechanic instructor for the Air Force and although I instruct J-47-GE-B I know a little about both the 48 & 33 and sometimes wonder why more research isn't done on centrifugal impellers as a single stage centrifugal compressor develops the same output pressure as a 12 stage axial compressor.

A/2C Richard A. Brass,
Chanute AFB, Ill.

Who Makes C-123? . . . How could the very best magazine in the business, Air Progress, make such a stupid mistake? I almost fell out of my chair when I read it! Unless Fairchild bought them out, Chase makes the C-123B. This was on page 10 in your "U.S. Military Aircraft Specs. Chart." But don't worry because it could have happened to anyone. Keep up the good work in all of your magazines and I hope the next edition of Air Progress will be just half as good as the 55/56 issue.

Jack Young, Columbus, Ohio

● Fairchild took over C-123 production from Chase.

Correction from Canada . . . May I draw your attention to the following
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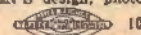
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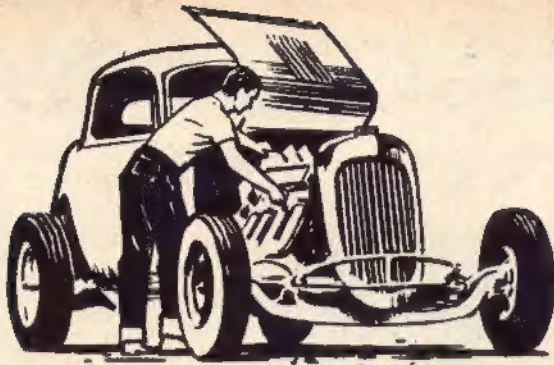
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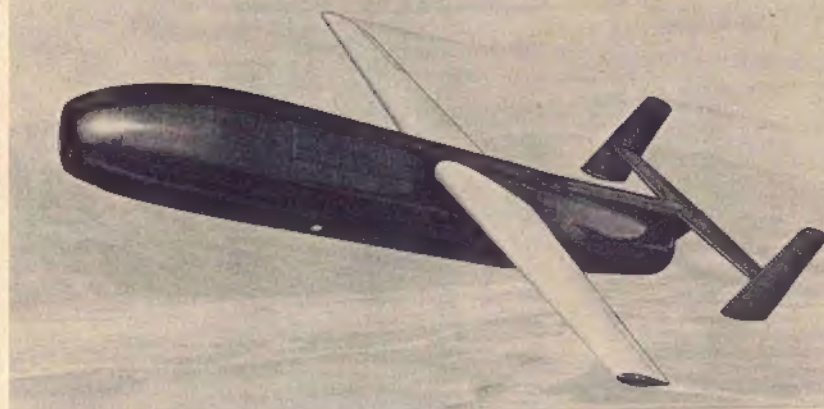
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Everything Under Control?



Radio control news for novice and expert... real door prize at Wisc. meet... conversion circuit with CG R-1 for reeds

Radio control seems to be getting more and more complicated all the time; receivers with five or six tubes are now common, and battery supplies have to expand in size and weight to keep pace. One experimenter has been bucking this trend, however, and feels his equipment might be of interest to others. So do we, and we present here a circuit that has given good results for A. A. Faranda (1430 Midland Ave., Bronxville, N. Y.).

Drawing 1 shows the circuit, and you can't get much simpler. Basically it is just a field strength meter, the relay of which has been fitted with a pair of contacts to act as a sensitive relay. Best results were had with air-core coils tuned with ceramic condensers. Using a low-powered hand-held 27 mc. transmitter, the 100 microamp meter could be made to show 20 microamps at a distance of 20 feet. Not much range, to be sure, but use of a more potent transmitter would extend this quite a bit.

As Mr. Faranda points out, this sort of receiver is of no use for model planes, but can be applied to small boats and cars that don't travel far from the operator. The meter came from a defective photo exposure meter, which can often be picked up in camera shops very cheaply. It is quite possible to apply a transistor amplifier after the diode—the circuit of the FSM adapter in the July 1955 issue would be just right for this use. However, Mr. Faranda didn't try this as he wanted to eliminate all batteries from the receiver. You need batteries for the escapement, though, and the same power supply would work nicely with the transistor.

"Charging" of small B batteries seems to be quite practical, but is usually accomplished at home, with some sort of power line operated device. At all-day flying sessions, though, you might want to give your B's a boost at the field; Drawing 2 shows how this is being done by L. R. Purdy (Box 329, Smyrna, Ga.), using the power supply of his transmitter. Model is fitted with a socket leading to the batteries, and in normal use, the receiver plug fits this socket. For charging, a plug from the transmitter goes into the battery socket. Charging rate is set by means of the series resistor to about twice the current that is normally taken from the B battery. The batteries are left on charge until a pair of hearing aid 22½ V. units go up to 50 V. Batteries which come up to 50 V. very quickly are considered no longer good; as they get older the batteries will charge faster and go down faster.

R/C meetings (not meets) are going strong, and we have reports on two big ones held in the East. The 2-day annual week-end event of the SEV/RCG was held at Langley Field, Va., and from all we've heard it was a big success. Two days of perfect weather allowed over 100 flights for the two days. There were about 18 planes on hand and some builders had as many as 15 flights! First flight, and next to last were made by the club Bootstraps; it is now fitted with a 2-wheel LG with the wheels centered under the LE of the wing, and makes beautiful ROG takeoffs all the time. Bill Woodall from Thomaston, Ga. came up with his new Cub fitted with Racon reed equipment and a 3-speed engine with spark ignition; Bill did the works with this plane, and it is felt he will be one to watch at the 1956 Nats.

Another new plane was brought along by Brayton Paul (the Flyball Actuator fellow)—a low winger, of course. It flew well and also made good ROG's. In fact, it seems most everybody tried ROG, but there were some hair-raisers. Saturday



Radio controlled target aircraft shown in lower photo on opposite page are Radio-planes company's original 1950 XQ-1 pulse jet powered; modified XQ-1; XQ-1A turbojet; and new turbojet YQ-1B (also shown left in flight).

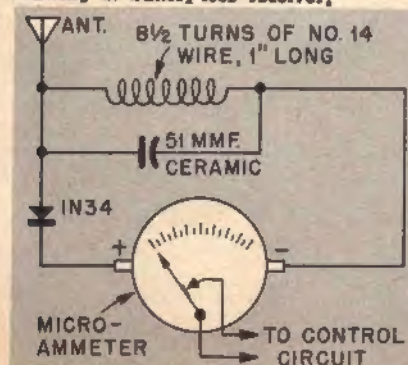
evening there was a picnic supper, followed by a technical session at which new control systems were shown, and there were color films of NACA work with R/C drones. These SEV/RCG gatherings have been getting a reputation as a "must" in R/C circles; those who have been once always return. The Virginia boys would like to see more visitors from Washington, from the North Carolina area, etc., though. Start making your plans now to attend the 1956 SEV/RCG weekend! This is not an invitational event—everyone who wishes to come is welcome.

An interesting conversion unit which makes it impossible to add reeds to many AF receivers is shown in Drawing 3. This is the circuit of the CG Model RK-2 unit, which is intended for use with the CG R-1 audio tone receiver. When used with this receiver, the RK-2 attaches to the receiver base by means of two of the mounting screws; it has the two-reed unit (model RK-3 is for three reeds) and one sensitive relay. The relay already in the receiver is put to use also. When converted, the 3S4 tube is left out of the receiver; thus filament drain of the converted job is less than for the original R-1 receiver. Also, the 15 V. bias battery is not needed. A transmitter capable of sending two tones between 250 and 400 cycles is required for this receiver; Model T-15 with the M-3 modulator added will do the job nicely. Actually, the reed conversion unit will work with other makes of receivers, but care should be taken not to use any more than 45 V. on it.

The fifth running of the daddy of all R/C Meetings—that are held every Labor Day at Selingsgrove, Pa. by the Pittsburgh Flying Circuits—came off on schedule this year, with three fine days to make everyone happy. This event has grown to such proportions that serious steps will have to be taken to keep it to a manageable size. It isn't that the Circuits wouldn't like to have everyone on the East Coast there, but just that with so many flyers on hand rarin' to go, there just aren't enough hours in the day for them all to fly. Even though it was possible to have six planes in the air at once (the most we saw were five, however) the boys on the 27½ line had to

(Continued on page 58)

Drawing 1: battery-less receiver!



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(Continued from page 4)

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Cyril Bassett, Manager,
Public Relations Department,
Orenda Engines Limited,
Toronto, Can.

More Wanted on GE... Latest Air Progress very good. Especially the older type sketches.

Your article about the jet engines interesting but fell way short by not giving General Electric any more than a picture of the B-36 nacelle. Did you know General Electric developed and produced, in quantity, our first jet engines? I realize security classifications restrict you concerning the use of certain material, but I do think the readers should know that General Electric is very much in the jet engine business in many ways. Pratt & Whitney and GE are the number ones in the jet engine business and will continue so for many years.

Patrick H. Packard, Cincinnati, Ohio

Vote from Buffalo... Your article on "Jet Engines" in Air Progress was really terrific.

Ray Vargovick, Buffalo, N. Y.

The WW II Planes... Your article on American Aircraft during WW II was very good. I am writing about the new Air Progress, of course. I hope that in the next issue of this wonderful publication you will have something on the Royal Air Force during WW II.

Robert Arneson, Eau Claire, Wis.

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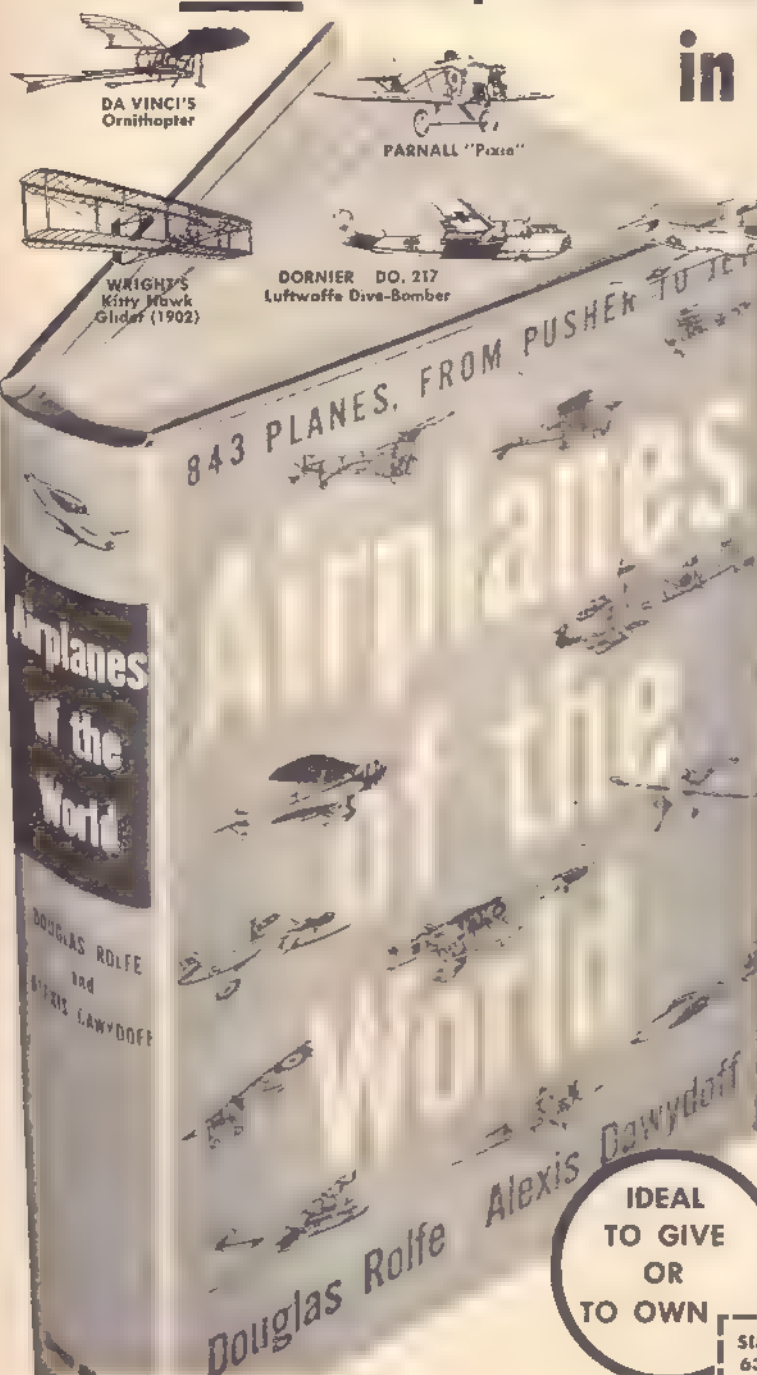
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Special illustrated instructions on fueling, towing and dingy handling, rules of the road, fog signals and Coast Guard safety requirements for life-preservers, fire extinguishers and signal lights will save the new power-boat owner many a worrisome hour and provide an excellent refresher for those with past experience.

Captain of the Ice by Charles Spain Verrall (Thomas Y. Crowell, 432 Fourth Avenue, NYC 16, 151 pages—\$2.50) is a slam-bang story of ice hockey as it is played seriously and well in the high school leagues.

The author presents Frenchy Beaumont, a French-Canadian boy, well schooled with both skates and stick by

built many wing models and made over 2,000 glides. The short but authoritative work covers many of the pioneers. The flights of Post, Odom and Yeager bring us up to the present.

Atoms Today and Tomorrow by Margaret O. Hyde (Whittlesey House, McGraw-Hill Book Co., 330 W. 42nd Street, NYC 36, 143 pages—\$2.50) begins with a field trip complete with Geiger counter to prospect for uranium-bearing ore, then a visit to a smelter to see the end product U-235. A careful explanation of the atom and the equipment used in laboratories to smash it along with explanatory diagrams make for easy understanding of this powerful force.

The Lonely Sky by William Bridgeman and Jacqueline Hazard (Henry Holt and Company, Inc., 383 Madison Ave., NYC

33rd St., NYC 16, 112 pages—\$2.50) gives the answers to a good many questions the intelligent layman might ask about the new science of "astronautics." It's done through 45 full-page drawings which provide a dramatic survey of the problems and possibilities of space flight. Each illustration is accompanied by a concise, yet informative descriptive passage that imparts many space facts.

Explorers' Digest by Leonard F. Clark (Houghton Mifflin Co., 2 Park St., Boston, Mass., 256 pages—\$3) retells in extremely readable style the adventures of six modern explorers: William McGovern in Tibet (A Gentleman Adventurer in Disguise); Hans Helfritz in Arabia (The Explorer Who Found the Kingdom of Sheba); Vincent Sheehan in Morocco (The Newspaper Reporter Who Turned Explorer); Michael J. Leahy in New Guinea (Leahy Discovers a Nation of Stone-Age Men); Dillon Wallace in Labrador (The Strange Triumph of Leonidas Hubbard); and Richard E. Byrd over the North Pole (An American Boy Who Dared to Dream).

Aviation Cadet by Joseph Archibald (Longmans, Green & Co., 55 Fifth Ave., NYC 3, 167 pages—\$2.50) follows the adventures—and hard work—of Aviation Cadet Melvin Towne as he progresses through Air Force primary school and goes on to the land of the jets.

Table Tennis Illustrated by Douglas



his Uncle Leo from the time he was able to walk. As the reader follows the team from the pre-season practice through the semi-final playoffs he lives along with the players the disappointment of defeat as well as the exhilaration of victory.

How to Build Children's Toys and Furniture by Norman Cherner (McGraw-Hill Book Company, Inc., 330 W. 42nd St., NYC 36, 144 pages—\$3.95) is a project book for the construction of children's toys and furniture.

It fits particularly well into the interests of young men using wood tools for a hobby and looking for salable ideas.

Masters of the Air by Glenn O. Blough (Smithsonian Publication No. 4183, The Smithsonian Institution, Washington, D. C. 31 pages—\$.50) begins with Otto Lilienthal who through trial and error

17, 316 pages—\$3.95) is the story of one of America's foremost test pilots. The author is the pilot who was chosen to complete the final test phases of the Douglas D-558-II Skyrocket, equipped with turbojet and rocket engines.

Pictorial History of American Ships (On The High Seas and Inland Waters) by John and Alice Durant (A. S. Barnes and Co., 232 Madison Ave., NYC 16, 300 pages—\$10) covers just about every type of ship and boat known to America—from the canoes of the Indians to the United States of today. With more than 600 illustrations it is both an absorbing history of American shipping and the country itself.

The Exploration of the Moon with text by Arthur C. Clarke and illustrations by R. A. Smith (Harper & Brothers, 49 E.

Cartland (A. S. Barnes & Co., 232 Madison Ave., NYC 16, 96 pages—\$1.75) is one title in the extensive Barnes Sports Library that ranges from A (for Archery) to W (for Wrestling) covering all manner of American sports. The book has 68 clear sequence photographs.

The Viking Rocket Story by Milton W. Rosen (Harper & Brothers, 49 E. 33rd St., NYC 16, 242 pages—\$3.75) is factual, full and fascinating. Three very good reasons why Mr. Rosen was the perfect choice to tell the story of the Martin-made research rockets: 1) he is chairman of the Space Flight Committee of the American Rocket Society; 2) he has been active in rocket research work for nearly 15 years; and 3) he was the scientific officer in charge of the development of the Viking.

—Conducted by William J. Lowry



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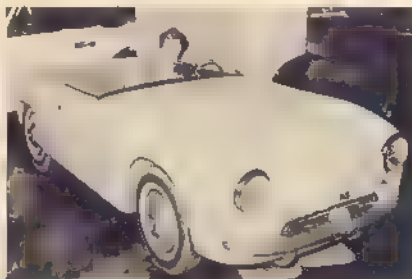
What's your question? You ask 'em and YM's Experts Advisory Board will do its best to supply the answers

Air-Cooled Racer . . . Are there other competition cars besides Porsche powered by air-cooled engines?

Fred Ely, Jersey City, N. J.

● Yes. The French Deutsch-Bonnet is powered by a 2-cylinder, horizontally opposed air-cooled engine of only 52 cu. in. displacement. The engine develops around 45 hp and drives the front wheels. The little car has done very well both in France and the United States, winning many races in its class.

Experimental for "X" . . . Formerly, experimental planes carried letters



Deutsch-Bonnet of France does 100 mph.

"NX" in front of the registration numbers on wings and rudder. Now that the second letter has been eliminated and only "N" prefixes the numbers, how are experimental airplanes recognized from production types?

Joseph Blair, Wallingford, Conn.

● Inasmuch as the airworthiness symbols such as "C" for Commercial, "X" for Experimental and others which formerly followed the letter "N" have been dispensed with since 1948, experimental airplanes now display the word "Experimental" near the entrance to cabin or cockpit, as shown in illustration.

The Flight-engineer Does It . . . How can pilot and co-pilot of a B-36 take care of all engine controls such as throttles, mixture, propeller, etc. without each of them having eight hands?

Fred Wilkowski, Scranton, Pa.

● Most of that work is done by a flight-engineer who not only adjusts engine power but also keeps a sharp check on the powerplants and fuel consumption. As you see from the

photo of B-36 flight engineer's station, he is a busy lad.

Air-lift . . . A friend of mine told me of a Douglas C-74 Globemaster he saw which had a bomb bay through which cargo was loaded. I thought that the Globemaster was designated C-124 and that it was loaded through the front.

Jeffery Watkins, San Francisco, Calif.

● Your friend is right. The C-74 was the predecessor of the present C-124. It was loaded through the bottom and had detachable floors connected to electric hoists which acted as elevators. Plane could carry 15 jeeps or 40,000 lbs. of cargo.

Flying gospel . . . Do many ministers of the gospel use airplanes for their religious missions?

Benson Jones, Milwaukee, Wis.

● Yes, quite a few in remote sections of the country where populations are sparse and distances are great. By using airplanes they can often perform several religious ceremonies in one Sunday in different communities as far as 50 miles apart. That was the habit of Father Fred Stadtmueller of Mosquero, N. M. shown here with his Piper Cub.

Pancake or "H" . . . I've had an argument with a friend of mine who says that the 24-cyl. Rolls-Royce "Eagle" engine built in 1945 is a "pancake." I claim it is an "H." Who is right?

Bill Conlin, Albuquerque, N. M.

● That is a moot question. The British call it "H" as its four rows each of 6 cylinders are positioned in horizontally opposed banks giving it a shape somewhat similar to the letter "H." Here in the United States we call this type of engine either "pancake" or "flat."

A.M.R.C.A. . . . Would you please tell me the address and how I could get in the American Miniature Racing Car Association?

Jerry McNichols, Danville, Va.

● Write Carl Noward, 1384 Berdan Ave., Toledo 12, Ohio.

Magneto Quest . . . We would appreciate it very much if you could give us some information in regards to an article by Bob More on racing engines for model cars and boats. We would like to have the location of the company which manufactures the Hornet magneto mentioned in the article.

E. X. Vogt, Cincinnati, Ohio

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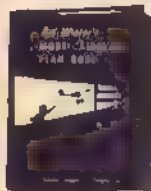
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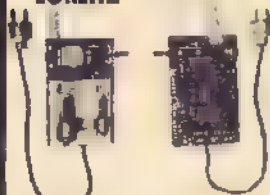
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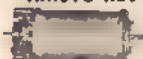
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Pages 82-83. Featured by the editors as a BLUE RIBBON SELECTION ARISTOCRAFT 3D R/C KIT.



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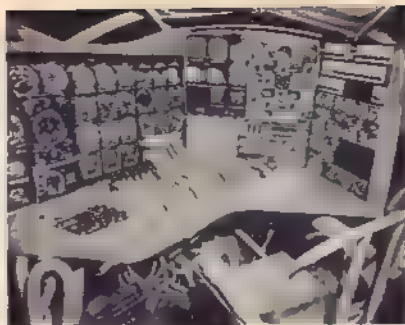
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Flight-engineer's office on B-36.

● These can be obtained from Franny's, 513 Vestal Pl., Reading, Pa.

It's Easy . . . Would like "info" on how can I simply (easily) waterproof balsa pontoons on boat like the Doodle Bug (Rainbow's)?

David Jacobson, Brookline, Mass.

● Try Berkeley or Midwest's fiberglass resin.

Foreign Scalars . . . I would like to know if you can give me the addresses of any companies here or in Canada or England, where I can obtain models of W.W. II German, Japanese, Italian, French and British aircraft, in solid wood or plastic kits, and preferably $\frac{1}{4}$ " = 1' scale. Please disregard those companies making the Ju 87B, Me 109F, Me 109E, FW 180A and S-00.

Craig Brown, Concord, N. H.

● Polk's (314 5th Ave., N.Y.C. 1) were importing Frog kits for awhile. Contact them.

Steam Engines . . . Would you be so kind as to tell where I can get any information about the Allyson steam engines that Walter A. Musciano used in his "Staten Island Ferry" as shown in the last issue of "Air Trails Model Annual?"

William D. Allman, Massillon, Ohio

● Write Allyson Co., Box 115, Brevoort Sta., Brooklyn 16, N. Y.



Cargo hoist of Douglas C-47.

Concern wanted . . . Where can I get a company selling props for boats (model boats)?

Alan Huckabay, Oceanside, Calif.

● Props for model boats are at any good-sized hobby shop. Ask for Sterling, K&O or Scientific props.

Camouflage Data . . . Could you please tell me the camouflage colors used on English, German, Italian and Japanese bombers and night and day fighters?

Tom Schmidt, Neenah, Wis.

● Polk's (314 5th Ave., N.Y.C. 1) has English books on camouflage.

Ship Plans . . . I would appreciate your help in locating some rather large (30 to 40 inch models in length) full-size, minutely detailed plans of modern warships. My favorites would be light cruisers or heavy destroyers.

Woodie Woodworth, Hollywood, Calif.

● Such plans are available from Models, Training Aids & Exhibits Section of the Bureau of Ships, Department of the Navy, Washington 25, D. C. Write for prices and list.

New Man . . . I am rather new as a hobby enthusiast and as a result am not very learned on the subject. Neither myself nor my local hobby shop has any information about model gas outboards. Would you please send me the addresses of the manufacturers of gas outboard motors?

Bob Couch, Underwood, Wash.



Father Stadtmaeller and Cub.

● Contact K&B-Allyn Co., 5732 Duarte St., Los Angeles 58.

Magnesium . . . Could you give me the address of a company that manufactures magnesium angles, bars, channels, I-beams, rods etc. for model builders?

Walter Kotula, Denton, Md.

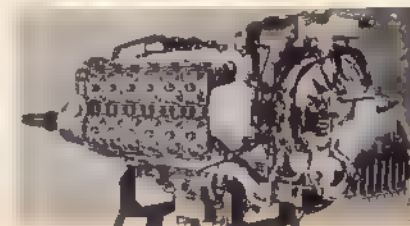
● Try Consolidated Model Engineering, 3087 3rd Ave., N.Y.C. 51.

Color Again . . . Upon recommendation of a friend I am consulting you on the Curtiss S.B.C.-4 Hell Diver and the Republic P-47B Thunderbolt. I would like to know all possible information on these planes including the color schemes.

*Joseph E. Riscavage,
Rensselaer, N. Y.*

● The SBC-4 had light gray fuselage and gray on all surfaces of wing with the exception of top part of the upper wing which was chrome yellow. Red engine cowlings and wide band below cockpit; horizontal and vertical tail surfaces were blue, lettering, black. The P-47s in the earlier part of War II were painted olive drab camouflage color; later they were unpainted and therefore of natural aluminum color with the exception of anti-glare patch and insignia.

Rolls-Royce Eagle "H" engine.



14" long — \$2.50

BARRACUDA

* FOKKER D-7

18" span
\$2.95"SPIRIT OF ST. LOUIS"
PROTOTYPE

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PRIMER
18" span — \$1.40SMALL FRY
17½" span — \$2.50

FLIP-FLAP 24" span — \$3.50

RYAN-ST
17½" span — \$2.50HOWARD "IKE"
20" span — \$3.00SEA SCOOTER
24" long — \$7.95* SUPER DING
18" long — \$2.95

* with engine — \$7.50

15¾" long — \$2.95
PORPOISE18" span
\$2.95

* SKY SCOOTER

18" span
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WHIRL-A-WAY

SKYLARK

31" span — \$2.00

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BRITISH SE-5

TIPSY

30" span — \$5.95

WING DING
18" span — \$2.25WING DINGUS
16" span — \$2.25

A NEW SERIES OF LOW PRICED FLYING MODELS

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consists of 4 famous scaled aircraft prototypes for all ½A engines. These completely prefabricated kits include shaped fuselage, airfoiled finished wings, formed landing gears, metal bell crank, insignias, etc. **\$1.50 each**, at your dealer

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ENGINE BONUS-PAK KIT

Fellows, you can purchase any kit in the new Mini-Series complete with a Cub .049A engine for **\$5.95** . . . a savings of **50¢** on the combined unit!

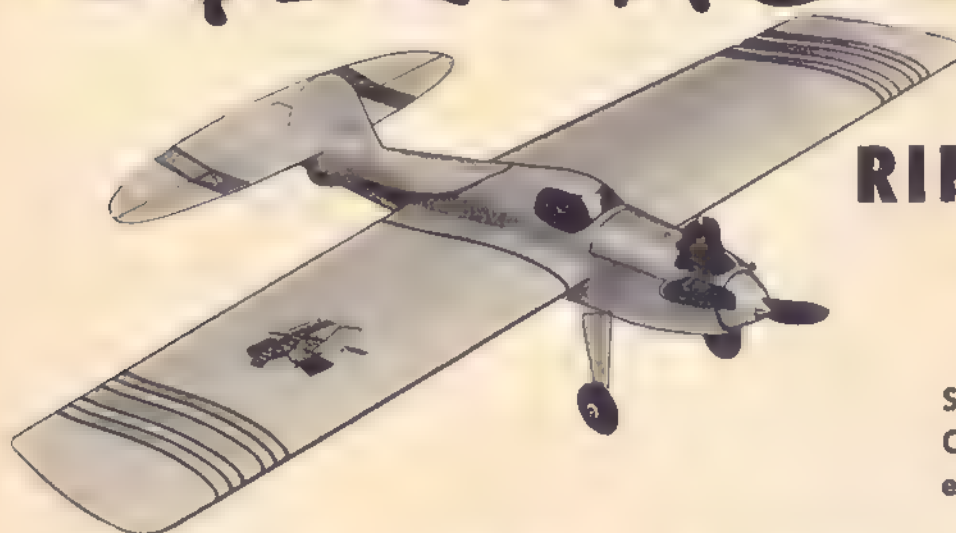
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STERLING'S NEWEST MODELS!



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Kit S-6—Span 42"

\$3.95

Stunt and Combat
Control Line Model for
engines from .19 to 60

"OUTFLIES ANYTHING I'VE EVER SEEN... AND I'VE SEEN THEM ALL!"

If you liked the Ringmaster, you'll love the Super! It's Matt Kania's best design . . . he says so himself! The Super Ringmaster has everything that made the Ringmaster world-famous . . . PLUS an amazingly simple, rugged, and realistic fuselage. YOU MUST FLY IT to see the astounding difference that this fuselage makes! Get Super Ringmaster at your dealer's . . . today!

Super Ringmaster features shaped and notched leading and trailing edges De-cut ribs, tail surfaces, plywood parts, fuselage BA-5A covering Formed wire landing gear Gas model airspan. Decal insignia Hardwood motor mounts Easy instructions, etc

says Matt Kania, world-famous model designer

Captain Eddie Rickenbacker's NIEUPORT '28'

Kit C-10—Span 33", Length 27"

Scale Control Line
Stunt Model for **\$5.95**
Class B & C engines

RICKENBACKER'S WORLD WAR I NIEUPORT...

AUTHENTIC EVEN DOWN TO

THE MACHINE GUNS!

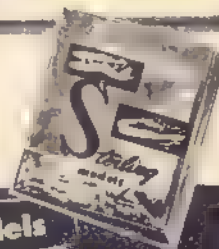
Captain Eddie Rickenbacker, Ace Commander of the famous 94th "Hat in the Ring" Squadron of World War I, scored some of his 25 victories in the Nieuport '28! Here's the exact scale model of this famous fighter stunt plane!

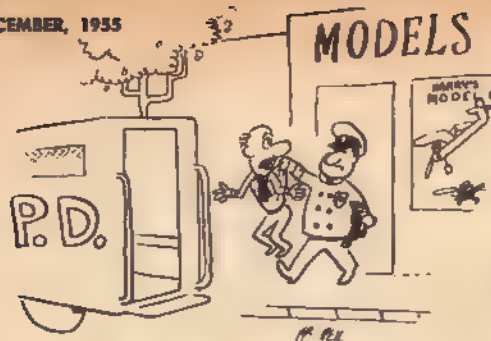


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handling and mail-
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Special features include Custom Spun Aluminum Cowling Material for machine guns. Complete hardware kit. Authentic decal insignia. Formed wire landing gear. Easy plans and instructions, etc.

Sterling models





Speaking of Young Men

IT'S THE FINISH THAT COUNTS

That hobby dealer (above) is protesting to the law: "But officer I tell you I've been selling 'dope' for years!" Which reminds us that for a long time we've been hearing thousands of young fellows talking about dope—yet there hasn't been a single delinquent in the crowd! If you think all this is in reference to the "Real 'Dope' On Covering" which you'll find on pages 48 and 49 of this issue, you're absolutely right.

We wanted to take a moment to talk about our "It's the Finish That Counts" series which has been appearing in many of our 1955 issues. We'd received a lot of comments on the need for some good model finishing data . . . the series was the result. To date these articles have appeared:

Part I—It's The Finish That Counts—S. Calhoun Smith (January 1955 issue)

Part II—How To Paint Plastic Models—William C. Grove, Jr. (February 1955 issue)

Part III—Cal's Secrets on How To Finish Models—Smith (March 1955 issue)

Part IV—Secrets of Model Boat Finishing—Walter A. Musciano (April 1955 issue)

Part V—(Mis)labeled part "IV"—More Secrets on Model Boat Finishing—Musciano (May 1955 issue)

Part VI—How I Finish My Models—Chuck Hollinger (June 1955 issue)

Part VII—Dramatic Displays For Your Plastic Models—(July 1955 issue)

Part VIII—How Construction Affects the Finish—Paul Del Gatto (November 1955 issue)

Part IX—Real Dope on Covering—Del Gatto (December 1955 issue)

There's been a lot of good advice passed along in these articles; we only hope that every model builder has followed them carefully. You haven't heard the final word on the subject, either. If you've got any finishing problems send them along to our Experts Advisory Board and we'll try to get them answered for you.

That cheerful fellow in the checked shirt is Darrel Williamson of Ontario, California. We wanted you to see that big 3-foot inboard of his (beam is 14"). It was designed to permit the installation of any type of radio control equipment—large or small. This craft, "Big Buoy," is featured in next month's issue as a construction project. If your interest is operating model boats, then this is a feature you'll not want to miss.

This collection of indoor model plane pix was made at a Prop Spinners affair run off in NYC Madison Square Boys Club gym. We offer them with the thought that such activity can be lots of fun for any modelplane club. The Prop Spinners called for a recognizable "scale" model not more than 14" in span, 1/16" and 1/32" structure, tissue covered. Other event was for Class A microfilm-covered craft under 30 square inches in wing area. Try indoor flying for wintertime fun.—Al Lewis.



This year: 10 job offers for every technician grad! Need will grow, as exemplified by developments like atomic power plant G. E. will build near Chicago for industrial interests, here in model form.

All Photos Courtesy General Electric Co.

I Recruit Technicians For General Electric

"Employment Scout" Bill Bacon reveals inside story to all you prospective engineering aides and lab assistants — how candidates are selected — what happens on the job.

■ You've probably never heard of Joe Hartwick, and perhaps you never will. But Joe is typical of the men who are an important part of the team that is creating the greatest technological boom the world has known.

Joe was an average fellow in high school. He worked summers and part time during the school year to pick up money to buy an old jalopy. Tinkering with the jalopy and making model airplanes were his hobbies. When he finished high school, he didn't know quite what to do with himself. There was not enough money to go to college, but it was obvious that he needed more training to undertake the work he wanted—designing and building mechanical devices, particularly for airplanes.

Mr. Banks, the high school guidance

teacher, sat down with Joe one day and after discussing the problem suggested the Mechanical Design Course at Spring Garden Technical Institute, a school with the purpose of giving instruction at a college level, though only for two years. It would mean Joe would have to work in his spare time, but the school would furnish the additional training he needed to do what he desired.

I met Joe during our annual recruiting visit to Spring Garden. It was an extremely hot, muggy day, but a good number of fellows turned up to hear our story of General Electric. Following the bull session of questions and answers, he came up and wanted to know more about the opportunities with jet engines. I talked with him as long as I could before beginning to interview the boys individually. Joe was a very sincere,

eager fellow who only knew in a vague way what industry had to offer him. He had had a few summer jobs on a production line with a small company near home and was afraid that he would be doing the same type of work after he graduated. I showed him some technical descriptions written by other fellows with his training. He began to realize the value of his education and discussed his situation with me very intelligently.

JOE CLIMBS THE STAIRS

The upshot was he was among those to whom I offered jobs in our Company. Joe joined our Technician Program and spent his first three months in Schenectady conducting performance tests on research steam turbines and analyzing the data obtained to improve the design characteristics. He remained in Schenec-



William E. (Bill) Bacon, who serves the General Electric Co. as an "employment scout" seeking "talent" at two-year technical schools around the country, attended public school in Newton, Mass. and Wilbraham Academy. On entering Harvard College he elected to study chemistry, and also took several courses in chemical engineering at M.I.T. Upon graduation he joined General Electric, and after completing a program of rotational assignments went into Technical Personnel work at the Research Laboratory in Schenectady. There he became quite familiar with utilization of technicians in support of the scientific studies being undertaken. Last year he transferred to his present position. He, to, has availed himself of several of the special training courses offered employees by the company.

tady for three more months studying the properties of new metal alloys when subjected to creep rupture, fatigue and various stress-strain conditions. For his next assignment, Joe went to our Evendale, Ohio jet engine plant where he spent three months evaluating the mechanical and performance characteristics of a new engine under development. In the course of this work he had to design and install special instruments in the engine in order to record the necessary data.

At the end of this assignment, Joe left the Program to join the Service Engineering group which has the responsibility of advising and instructing Air Force personnel in the operation and maintenance of jet engines. Service Engineering installs, trouble-shoots and maintains our equipment in the customer's location. It is a vital asset to our sales. After a period of training in service work and completing several courses offered by the Company, Joe began visiting various Air Force bases all over the U. S.—Texas, Ohio, Massachusetts, etc.

Presently, Joe is working in Alaska and carries the title of Field Supervisor. Even this is a temporary situation, for Joe is eligible for promotion within the next few months.

A Service Engineering job such as Joe's is not easy to get due to the high qualifications necessary—both technical and personal. But it is one of the possibilities for two-year technical institute graduates. Other fields include research, development, manufacturing, sales, personnel and the like.

HOW THE "SCOUT" CHOOSES MEN

My job with General Electric is to employ the Joe Hartwicks and the hundreds of other people trained in two-year technical schools who are necessary to support the engineers and scientific people in our organization. This is done in several ways—recruiting at the two-year technical institutes and junior colleges, interviewing people who have written to the Company seeking employment, corresponding with others and helping them contact the right person, and the like. My job also involves promoting the utilization of laboratory and engineering assistants throughout the Company and attempting to make sure

there is an opportunity for each man to effectively utilize his abilities. In addition, I am continually attending meetings with educators all over the country to further the cause of technician training and help create a better understanding of what industry wants in a technician.

America's needs for engineers in the foreseeable future will continue to be much larger than the available supply. If this country is to maintain its rapid growth, industry must utilize its talents more effectively by employing people trained in schools such as the two-year technical institutes.

**M. M. Boring, Chairman
Engineering Manpower
Commission
Engineers' Joint Council**

Let's see exactly what happens when I "hit" one of the two-year schools to find talent. First, we'd better make certain that the term "technician," or graduate of such schools, is understood. He's the lad who stands halfway between the skilled craftsman (machinist, electrician, etc.), who usually gets his training at a trade or vocational school, and the professional engineer, who takes a four- or five-year college course. The technician is an assistant, a right-hand man to the engineer. He might work as a draftsman, a detail designer, cost estimator, production supervisor, time study man, a technical salesman or in a number of other categories, with titles such as Engineer's Aide, Junior Engineer, Laboratory Assistant or Lab Technician.

Naturally, when I visit one of the schools I must have a lot of information concerning the types of work we have available at the time and geographically where it is done, number of persons needed and with what background, qualifications of those who have been successful in the Company, and the like. After presenting our Company's story to the interested students, I sit down with

them for an interview. During this discussion I'm attempting to learn a lot of things—technical ability, interest in technical work, "drive" or initiative, ability of each man to reason and express himself logically, interest in our Company, long-range goals and ambitions, etc., overall trying to see how this man's qualifications compare to the people who have done well in our firm.

Following the interviews, I then sit down with the man's instructors to see how accurate my evaluation has been. On the basis of the instructor's comments and my observations, I decide to whom I would like to make offers.

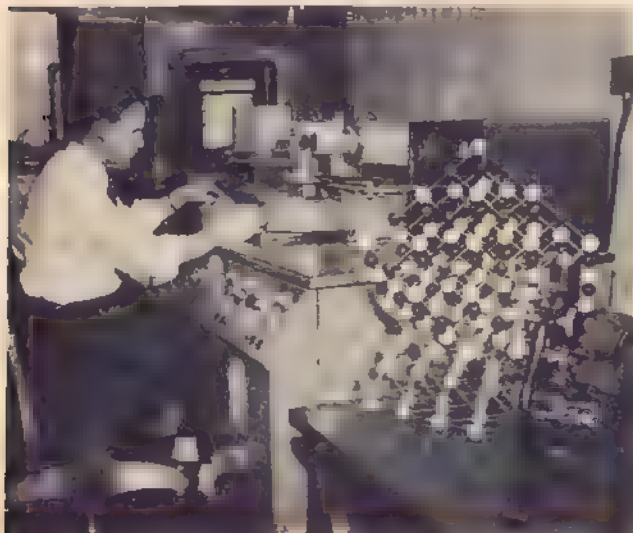
We employ thousands of technicians in our Company and feel that we would not be in the successful position we are today if it were not for these men. Every plant (and there are approximately 130 plants) employs technicians, and the demand is growing very rapidly as the schools turn out better trained people and industry becomes familiar with the types of work technicians are able to undertake. And as the demand grows, competition increases. Companies and scouts are competing actively for the graduates. This year graduates of many two-year institutes received as many as ten job offers from different companies at salaries ranging from \$60 to \$100 per week. Jobs were available in practically any type of work—jet engines, rockets, automation, atomic energy, machine and tool design, electronics (both communications and controls)—I could go on indefinitely. Graduates could pick the type of work and the company they wanted from a wide selection.

Generally, recruiting starts in February and March and runs into May. We visit schools from Oklahoma, Missouri and Minnesota to the East Coast, and from the Canadian Border to the Far South. This year we visited more than fifty schools in over fifteen states. This included schools of various types:

WHAT KINDS OF SCHOOLS?

- 1) Privately owned and operated—Wentworth Institute, Spring Garden Institute, Rochester Institute of Technology, etc.
- 2) State and Municipal—New York State Schools, New Hampshire Techni-

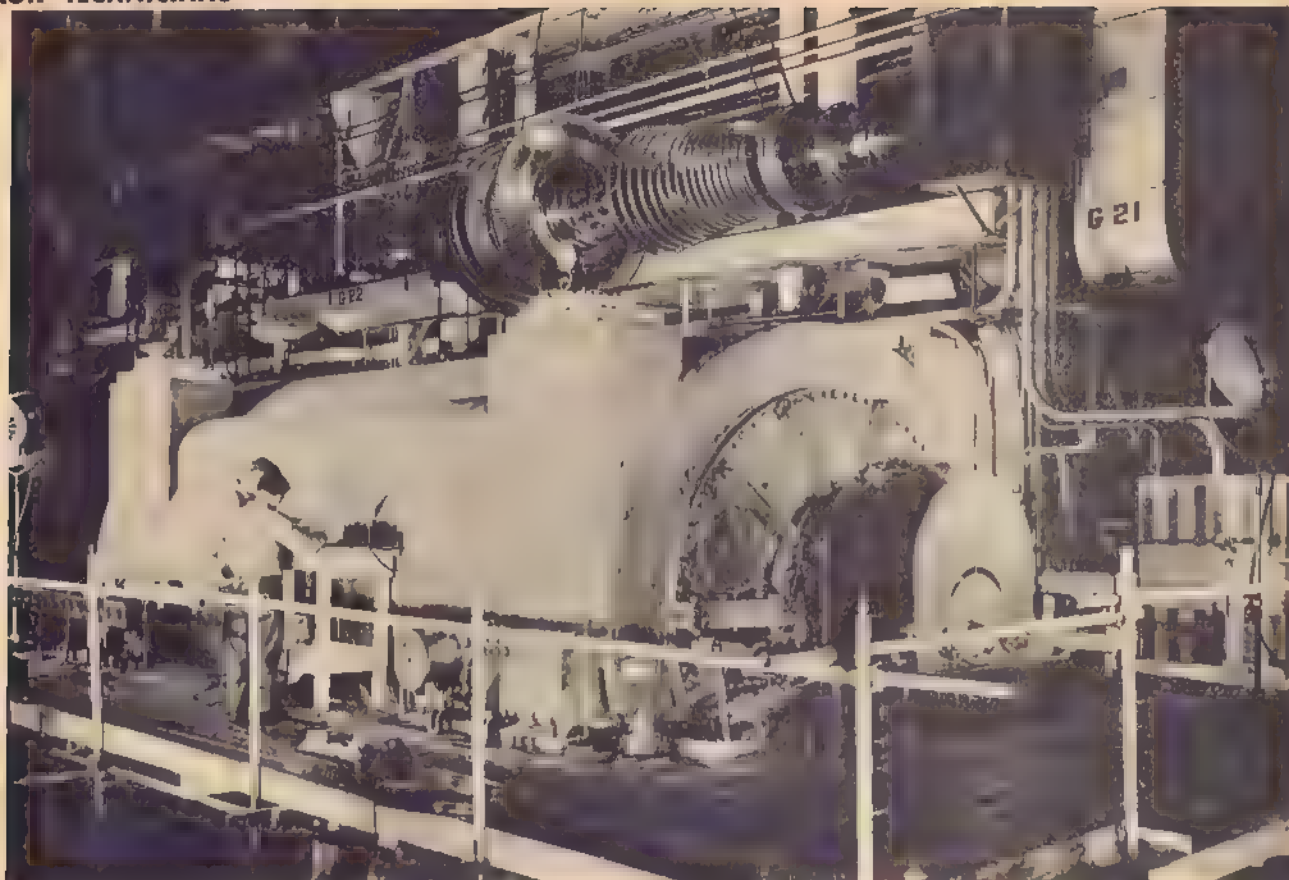
Technicians are much wanted in the laboratory. Here's one studying atomic structure of metals by X-ray diffraction techniques.



He's telling the Air Force! A G.E. service representative instructs the A.F. boys in the proper ways of repairing jet engines.



I RECRUIT TECHNICIANS



Like the power field? As technician on assignment in Steam Turbine Dept., you could be testing world's largest—200,000 kilowatts.

cal Institute, Connecticut State Technical Institute, etc.

3) YMCA schools—Sinclair College, Worcester Jr. College, etc.

4) Schools operated on proprietary basis—Milwaukee School of Engineering, Cal-Aero Technical Institute, etc.

5) Extensions of colleges or universities—Oklahoma A & M Technical Institute, U. of Dayton Technical Institute, Purdue University Technical Institutes, Penn State Technical Institutes, etc.

Some of these schools have been in existence a long time, like Wentworth Institute and Ohio Mechanics Institute. Others are quite new in the field such

as U. of Dayton and the Purdue University extensions, but we visit them regardless, provided they are giving adequate training.

This spring we interviewed well over 1,000 students from all types of backgrounds—sons of Midwestern farmers, coal miners, mechanics, doctors, lawyers,—fellows who had never been away from home, others with military service behind them; some who had worked summers, others who had spent their spare time on hobbies such as model building, making electronics gadgets, repairing television and radios, etc. There is no particular type of interest or background that determines a man's ability in industry.

The fellows that we employ have their choice of going on our Technician Program or going directly to the plant conducting the work which they desire. The Technician Program operates in the following way:

HOW TRAINING WORKS

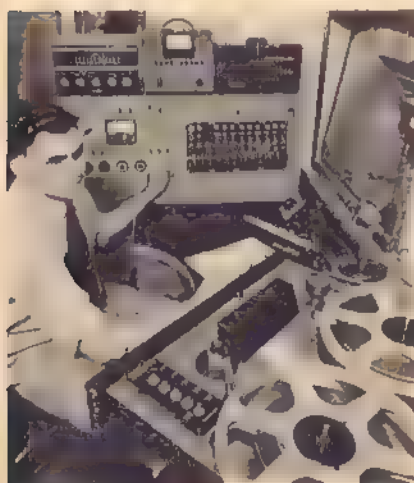
At the schools we try to determine what general interests the man may have. We then assign him for a three-month period in the type of work he wants and at the plant location of his choice. The assignment may be in an engineering group, a laboratory or in experimental testing work. If he decides he likes the work, he may go off the Program and remain in the work he is doing. However, if he is not satisfied, he tries another assignment of his choosing. The process may be continued until the Programmer finds a job that he wishes to accept permanently. The Program is run on a Company-wide basis offering

assignments from Massachusetts to Illinois in approximately 80 different plants. Men have gone off the Program into research engineering, development laboratories, manufacturing, service, sales, etc., on products ranging in size from transistors to steam turbines. The opportunities concerning types of work and products are unlimited.

Occasionally we run into fellows who have had previous work experience and know specifically the type of activity they want to engage in. In these cases, the man may not be interested in the Program, since it is designed to introduce people to the variety of work available in industry. If we feel he is qualified, his papers and our comments are sent to the particular plant location in which he is interested. The plant personnel then contact the man and figure out the employment details with him.

After a man is with the Company, there is a wide variety of ways he can continue his education if he wishes to further his knowledge and upgrade himself. He may attend a nearby college or university at night with Company support. Or he may take general courses offered throughout the organization which will further the training he received in school. In addition, each plant conducts training courses that are designed to provide background on problems concerning the particular products the plant manufactures.

Quite often, I find that a fellow will develop an interest, either through his work or outside study, in a field that he did not anticipate while at school. For example, a man trained in Mechanical Technology may work on jet engines, strength of materials, air conditioning,



Investigating sound reproduction with audio equipment is but one of the jobs in the work of the electronics technician.

motors and generators, turbines, controls, etc. He may believe when he graduates that he wants to work on jet engines—and find later that motors and generators are a greater challenge to him, a source of more intense interest.

Many men end up in the research field—that is, the study of the problems of explaining nature's behavior. Research may involve such questions as . . . Why do metals melt? Why and how do insulations break down? What is the real nature of transmitted waves? What is the atom composed of?

FOREIGN ASSIGNMENTS

Other men work with our International General Electric Company and are traveling throughout the world. A typical example is Russ Keeney, a graduate of Montgomery Jr. College, who is in Brazil trouble-shooting diesel locomotives and helping our customers set up service and repair facilities. H. E. Webber is in India installing steel mill drives and associated equipment.

Life as an employment "scout" is full of unexpected situations. One very outstanding graduate was talking with me when I detected that he didn't seem too interested in our discussion. Digging a little deeper, it turned out that he was "collecting" job offers even though he had already decided he was going to take a job in his father's business. At the time of our discussion, he had talked 23 offers.

Or take the case of the girl chemical technology major who stated she would like to work for us provided we would employ her boyfriend. We interviewed the boyfriend and found him qualified. Both were hired and are working for us at the present time.

In general, we are looking for ability regardless of the curriculum the student has taken. This year, the sciences people—chemistry, metallurgy and physics—were in particularly high demand. Naturally, those studying aeronautics, electricity, electronics, mechanics, heating, refrigeration and air conditioning, etc. were badly needed. Although a lot of fellows are going into the field of electronics, excellent opportunities still exist in "parent" field, as in electrical

power—turbines, capacitors, transformers, rectifiers, controls, etc.

OPPORTUNITIES AHEAD

What about the future? There is no question that tremendous new technological fields are yet to be explored—nuclear energy, automation, computers, research in the areas of new material (chemicals, metals, ceramics, etc.) to meet the higher pressures and temperatures demanded for more efficiency, application and design of these new materials into radical new types of equipment, and the like. The growing population and national economy assure that new advances in science and engineering at a greatly accelerated pace form a must if we are to remain the greatest country in the world. The demand for technical talent will increase.

Just at G. E. alone, expansion is under way in all the fields mentioned above. In addition, we are building three new control plants in the South and Midwest; industrial heating equipment is at a new location in Indiana; air conditioners will have a new plant in Texas. Other new plants are springing up all over the country. As the facilities move into these new plants from the established plants, it permits the businesses in the old ones to expand. But the expansion of a business depends largely on technical improvements which, in turn, depend on technically trained personnel. One requires the other.

WHAT TO DO FIRST

Consequently, if you want to "get ahead" in a technical field, it is to your advantage to get as much education as possible. You should ask your high school guidance counselor or principal for help in determining what is the best way for you to continue your schooling. The State Department of Education in your state may be able to assist you. Get in touch with schools in your vicinity which offer post-high school education. Study them carefully and select the one which best suits your needs and interests. Talk with people in industry—they will welcome the opportunity to attempt to help you. There is a great deal of literature available which might be of value to you. A number of pamphlets may be had from G. E.

If you decide to attend a two-year school undertaking technical studies, there are approximately 175 schools in the country from which to choose. I am sure you will find one to your liking. But whatever school you attend, if you choose to take technician training, the chances are that I'll be seeing you on one of my scouting trips.

BOOKLETS AVAILABLE

EDITOR'S NOTE: Of course, large companies like G.E. also conduct an annual—and very extensive—program of recruiting at colleges and universities with the regular four (and five) year courses. They are vitally interested in hiring all kinds of personnel in the science and engineering fields, as well as in others. This article is the first of a series that will give you, the prospective employee, first-hand information on the needs and expanding opportunities offered by individual companies of American industry. Here in *YOUNG MEN*, the high school student can obtain the inside story directly from his potential future bosses, and thus be aided in sorting his plans and steering a course.

Among the large American businesses that have available "guidance" literature for the benefit of the school student, no matter what company he eventually will become affiliated with, General Electric is outstanding. Below are some of those booklets and pamphlets mentioned, free for the asking.

To obtain them, address your cards and letters to Public Relations, Dept. 2-119, General Electric Company, Schenectady 5, New York.

The Technician Program
Engineering Tomorrow (APG-220A)
Edison and Electricity (APD-53)
Steinmetz: Latter-Day Vulcan (APD-67)
Why Study Math? (PRD-1)
Motors Make the World Go Round (APD-79)
The Story of General Electric Research (APD-71)
Story of the Turbine (APD-68)

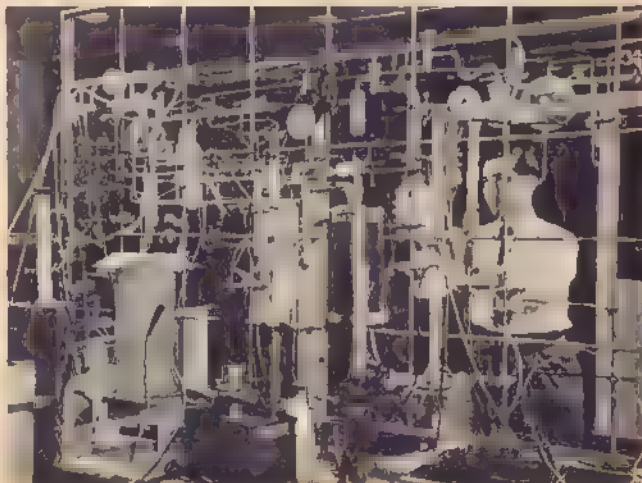
The Company also distributes free comic books of an informative nature, among which are:

Adventures Inside the Atom (APG-17-5)
Adventures in Jet Power (APG-17-2A)
The Story of Light (APG-17-7)
X-Rays in Medicine, Industry, and Science (APG-17-3)
Network of Power (APG-17-1A)

Bill Bacon's job offer may lead to technician work like conducting noise-level measurements on experimental transistors.



G.E. wants 'em in research, too. This technician is measuring pressure of gasses equilibrated over solid alloys at high temperatures.



Photography & Young Men



School Activities Offer Outstanding Opportunities to Student Photographer

■ One of the best ways to embark on a career in photography is to get started while you're still in school. Nowhere else will you find such a plentitude of willing models so close at hand. And as for a variety of subjects, the activities of the modern junior or senior high school can keep you busy all the time. Presented is a sampling of the many possibilities that you encounter in the course of a school year. Many of today's professional photographers got their start while in school, just as you can.

Best thing about school photography is that practically every student and teacher will be vitally interested in your efforts. Take that dramatic basketball shot above, for instance. Score is tied and your team is awarded one free throw just as the game-ending buzzer sounds. Player makes point and the home team wins. Man, you've got yourself a picture that will be remembered by classmates for years! Don't specialize just on sports—try everything: plays, parties, parades, assemblies, speeches, classroom activities.

At sports events don't overlook the chance for interesting pictures off the playing field. Spectators make entertaining and excellent subjects when they don't know they're being photographed. You can use slow shutter speeds and natural light if you are careful and hold camera steady.

Football offers exciting pix possibilities . . . your shutter needn't be fast if you move camera with action of the play. Shot was taken at only 1/200 of a second at f/11. Get close to sidelines, try to anticipate play.





Although mechanically this picture of co-stars at a high school production of Hamlet is a simple one (straight flash at the camera, 1/200th second at f/11), your real job is posing subjects naturally and capturing pleasant facial expressions.



You add a dramatic touch to what might otherwise be ordinary flash pictures by removing flash gun from camera and having an assistant hold it a few feet to one side. This results in good contrast between shadows and highlights.



Single electronic flash was utilized to catch this skating party in progress. Light held off the camera and at an extreme right angle to action to produce the dramatic effect. Shutter was set for 1/100th second; opening was f/11.



Good group pictures of interest enhance any school yearbook. Try to avoid staid, formal shots. Here's a group caught after their skating party as they bear down on the busy counter boy. Flash, 1/100th second at f/16.

The popular "two straws and one soda" theme is a sure winner anytime, especially if you can turn out shots like this. This was made at 1/100th second with lens opening of f/22; straight flash. Try to catch subjects in unposed mood.



Super Delta Turbine Jet...



This free flight ducted fan is refinement of Roy's much-imitated "Jaunty Alouette" — added item of interest is fact this craft can be flown U-control

By ROY L. CLOUGH, JR.

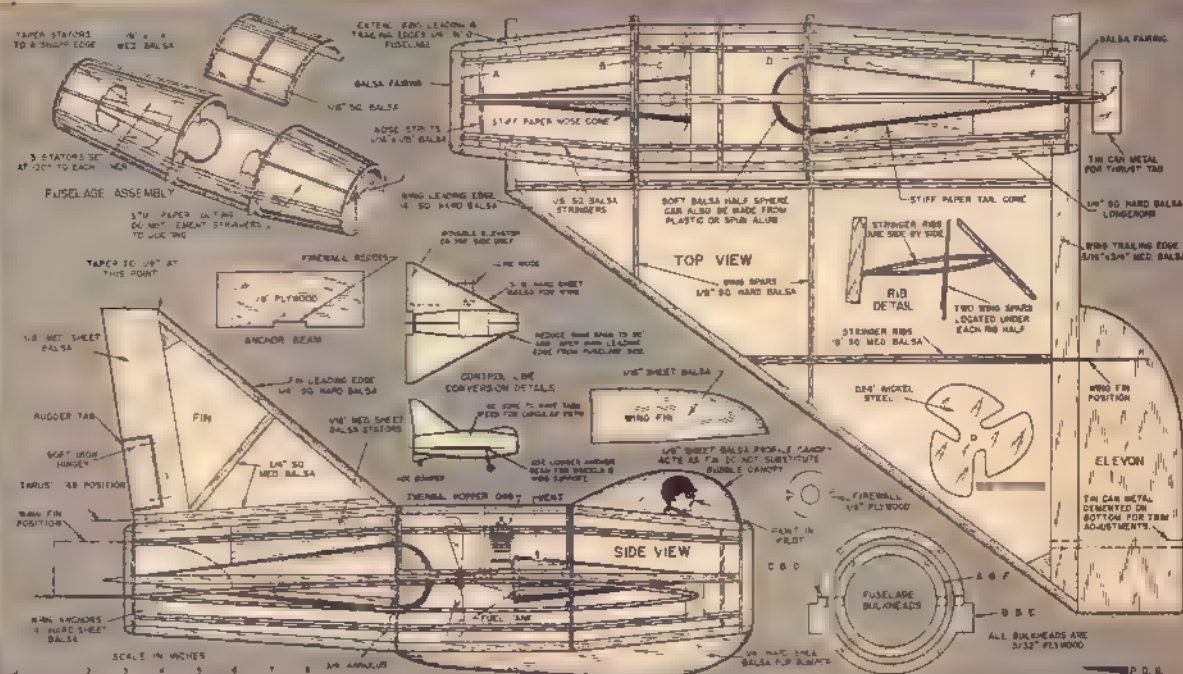
■ Here is a free flight ducted fan that is definitely in the "hot" category. It is no floater but a fast and relatively powerful little machine that offers good scale-type performance.

This doesn't mean, however, that the model is tricky or hard to adjust. It isn't, but it does require some understanding to get the most out of it. Much of the difficulty encountered by model builders with their first ducted job stems not from any basic deficiency of the duct but from mis-application of propeller-plane experience to the type.

The average prop-driven model would simply fold up if we attempted to drive it through the air at speeds and angles which would produce, by wing lift alone, the same rate of climb we get by hanging on the prop. We are so accustomed to adjusting models which are really semi-helicopters and in which the wing plays a distinctly minor lift role during climb, that we tend to forget the basic proposition of wing lift by motion through the air. The jet model forces us to re-examine the original proposition, because the rate of climb of the jet is determined by the wings. It doesn't have a helicopter tugging away at it; it must fly or fall on the basis of its lift/thrust/drag ratio.

For most conventional models the term "stall" has lost all meaning because in most cases the static thrust is greater than the weight of the model. The jet model reminds us that when we attempt to drive a wing through the air at a higher angle of attack than it can deal with it ceases to lift. Therefore, when we build jet models we must design them to fly under power; instead of installing a wing to secure a glide when the power goes off we must use the wing to lift the model with the power on as well as support it afterward.

This means we must use a different approach to flight trim for we must keep the lift-thrust forces operating together most efficiently. It is the nature of wings that they produce the best lift-drag ratios at fairly low angles of attack and it is the nature of jet power-



plants that they work better at higher speeds. This state of affairs dictates rather closely the optimum flight trim for ducted fan models: shallow climb angles at high speeds produce the best rate of climb and over-all efficiency.

In practice then we adjust the model in somewhat the reverse order from conventional free flights. Our power-on adjustment is first of all to secure the maximum speed we can get in level flight instead of the maximum angle we can get in the climb. Then, to gain altitude we gradually ease off the trim tabs until the model noses up as far as it can without an appreciable loss of forward speed. The maximum rate of climb will come near this point—a model with a good thrust such as the *Tee-Jay* will climb at a steeper angle as may be readily seen by the accompanying flight shots, but despite the nose-up attitude the gain in terms of feet per minute is far less than at the lower angles. (We had a practical consideration to deal with here: it is far easier to photograph a slow-moving model than a fast one.)

Tee-Jay's duct arrangement is a result of further refinement of the Jaunty Alouette proportions (these were detailed in the September 1954 issue), plus alterations to make the system more efficient for free flight. For example, we have eliminated the by-pass slot and now use a tight-fitting hatch because a free-flight, hand-launched model quickly comes up to speeds where the nose ram can supply sufficient induction—an initial high rate of acceleration is not needed; and intakes at right angles to the thrust line make a free flight harder to adjust because they produce an off-thrust that will vary with the angle of attack.

Some changes have also been made in the internal proportions; all are im-

(Continued on page 77)

Full size plans for "Tee-Jay" are a part of group Plan #1255 from Hobby Helpers, 770 Hunts Point Ave., New York 59, N. Y. (50c)

Projects for Home-School-Club Workshop



When we first heard that the Salem, Ore., Sky Cats model airplane club had never damaged a model in transit in all its contest going, we felt the rest of the country's acromodelers should be let in on the secret.

Earl Cayton, designer-draftsman-model builder, has sketched out the important details of the Sky Cats' model transporter. The carrier is as-

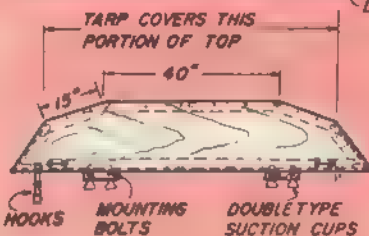
sembled with nails and Weldwood or similar glue. Finish consists of 2 coats of sanding sealer and then 2 coats of a good grade enamel (which is hot fuel proof). Use this finish inside and out to prevent damage by fuel drippings from planes.

As many as 20 free flight models up to the size of "Sailplanes" have been taken to contests at one time in this carrier.



THE TOP IS COVERED WITH A 4'x6' YARP. FASTENED DOWN WITH "DURABLE DOTS," SPACED APPROX. 9" APART ON THE SIDES AND 6" ON THE FRONT AND BACK.

1/2" PLYWOOD BOTTOM IS USED WITH 1/4" PLYWOOD ON THE SIDES. USE 1"x2" BOARDS FOR FRAMEWORK.



MODELS ARE RUBBER BANNED INTO PLACE WITH REMOVABLE HOOKS

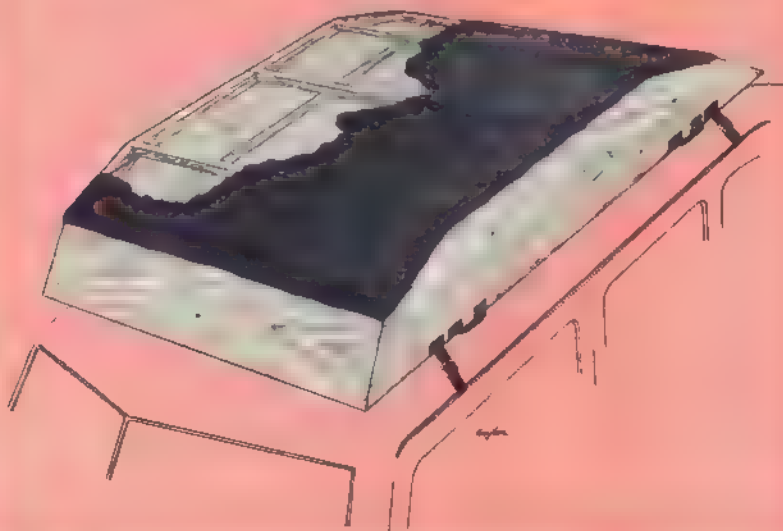
DRAWER HANDLES FOR CARRYING

THREE 1"x1" TOP SLATS REMOVABLE FOR LOADING OF MODELS



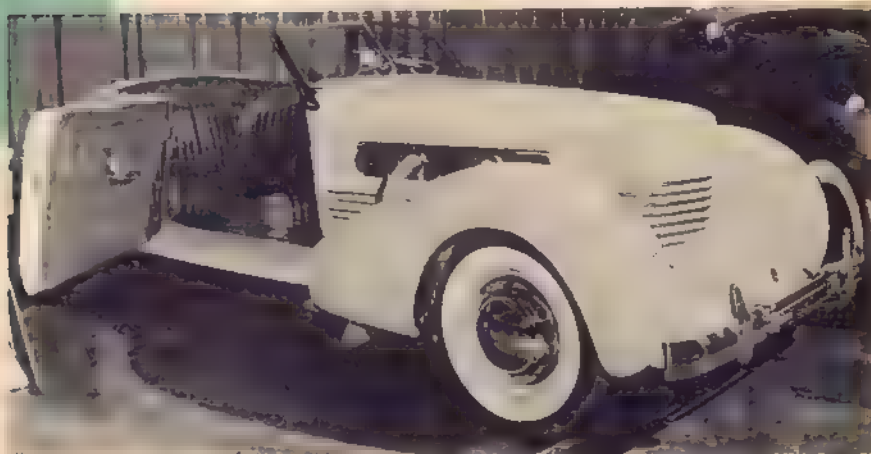
2"x4" SPACER HOLD CARRIER DOWN WITH RAIN MOULDING HOOKS

Scale 1' 2' 3'



AUTO PROGRESS

The Bear Ideal of car collector was 1937 Cord Model 812 convertible. Far advanced for its time, it featured front drive, pre-selective gear shift, retractable head lights, supercharged V-8 engine, 170 hp.

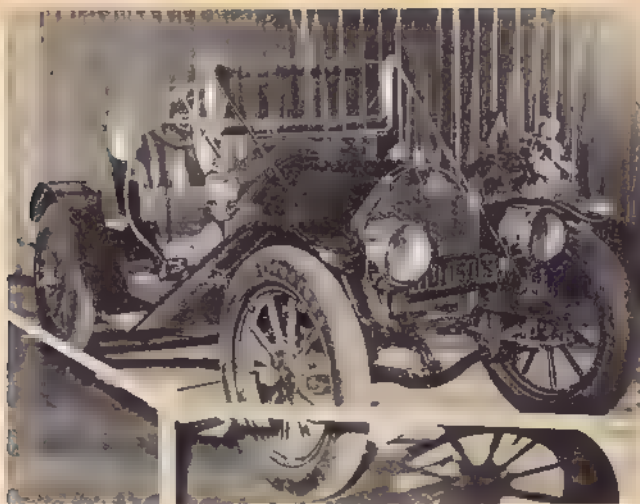


Two English, vintage sports cars. Left, a 1935 Squire of which only half-a-dozen were built. Right, one of most famous cars of its days, a 1934 5-cylinder Lagonda; held many European records.

Beauties on parade

An American Special. Built by Danny Ramm of Wayne, Mich. for the Mexican Road Races. Powered by a 6-cylinder Ranger aircraft engine of 175 hp. It closely resembles European Grand Prix race car.



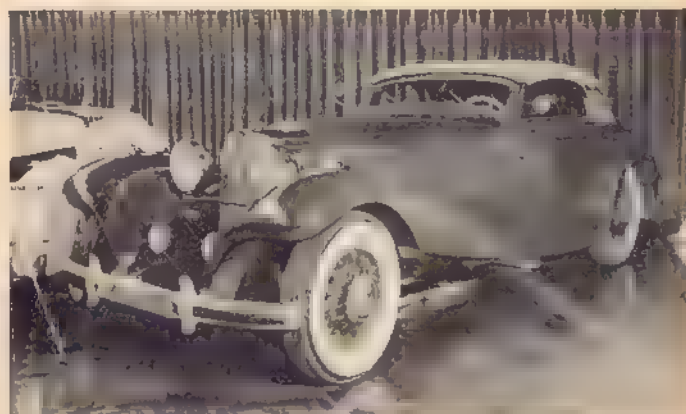


1910 Sportscar, the Hudson Model 20 enjoyed great popularity in the days when motoring was sport and adventure. It was powered by 4-cylinder engine of 23 hp and sold for \$900.

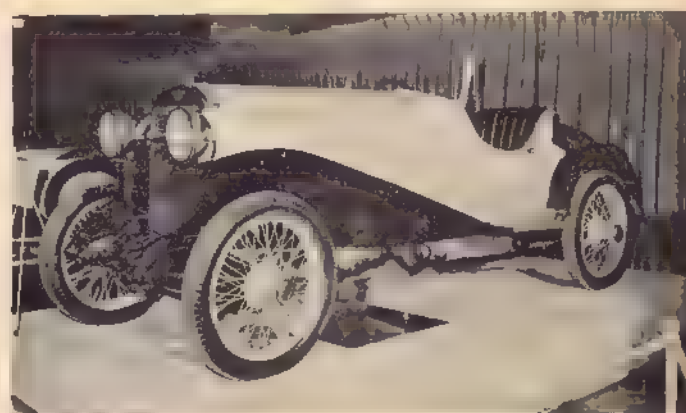
Suppose someone put the question to you: "What was the most beautiful car of all time?" Could you come up with an answer? To illustrate how difficult a job you might have we present here a collection of 4-wheeled beauties that were gathered for display by the Ford Museum in Dearborn, Mich. Just from this group . . . which one would you consider the most attractive? Some think nothing could surpass the Hispano-Suiza. What's your choice?



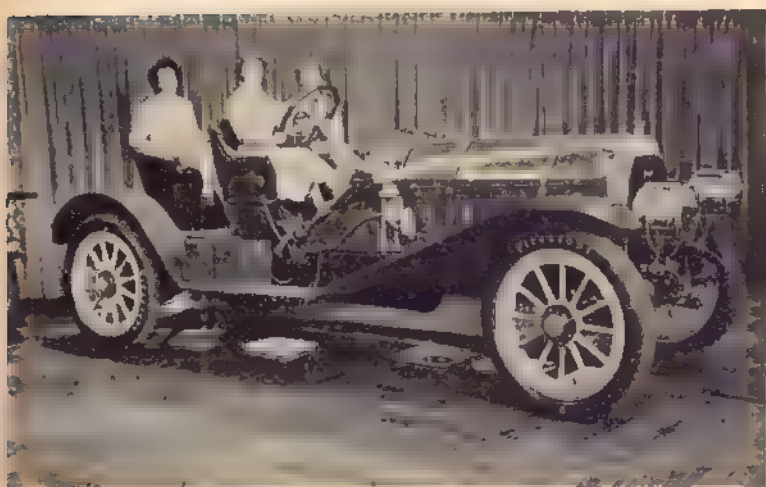
American sportscar designed by Vincent Gardner of Detroit. The Vega's chassis is adapted to take variety of engines from MG to 60 hp Ford V-8. Hydraulically operated lights.



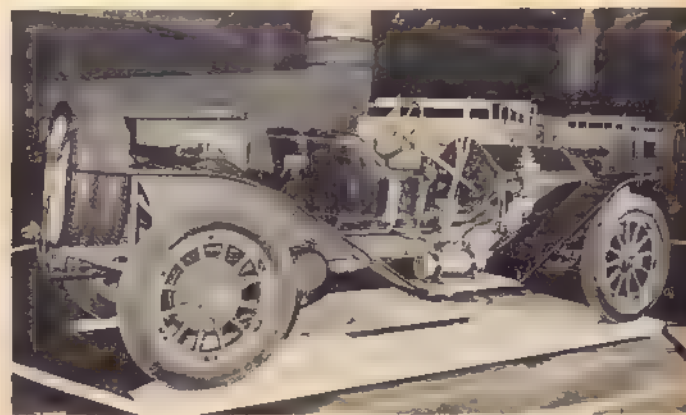
German Mercedes 540K of 1938 was favorite vehicle of Nazi Brass. Powered by monstrous supercharged straight-8 and weighing close to 3 tons, it tops 100 mph. Still in demand.



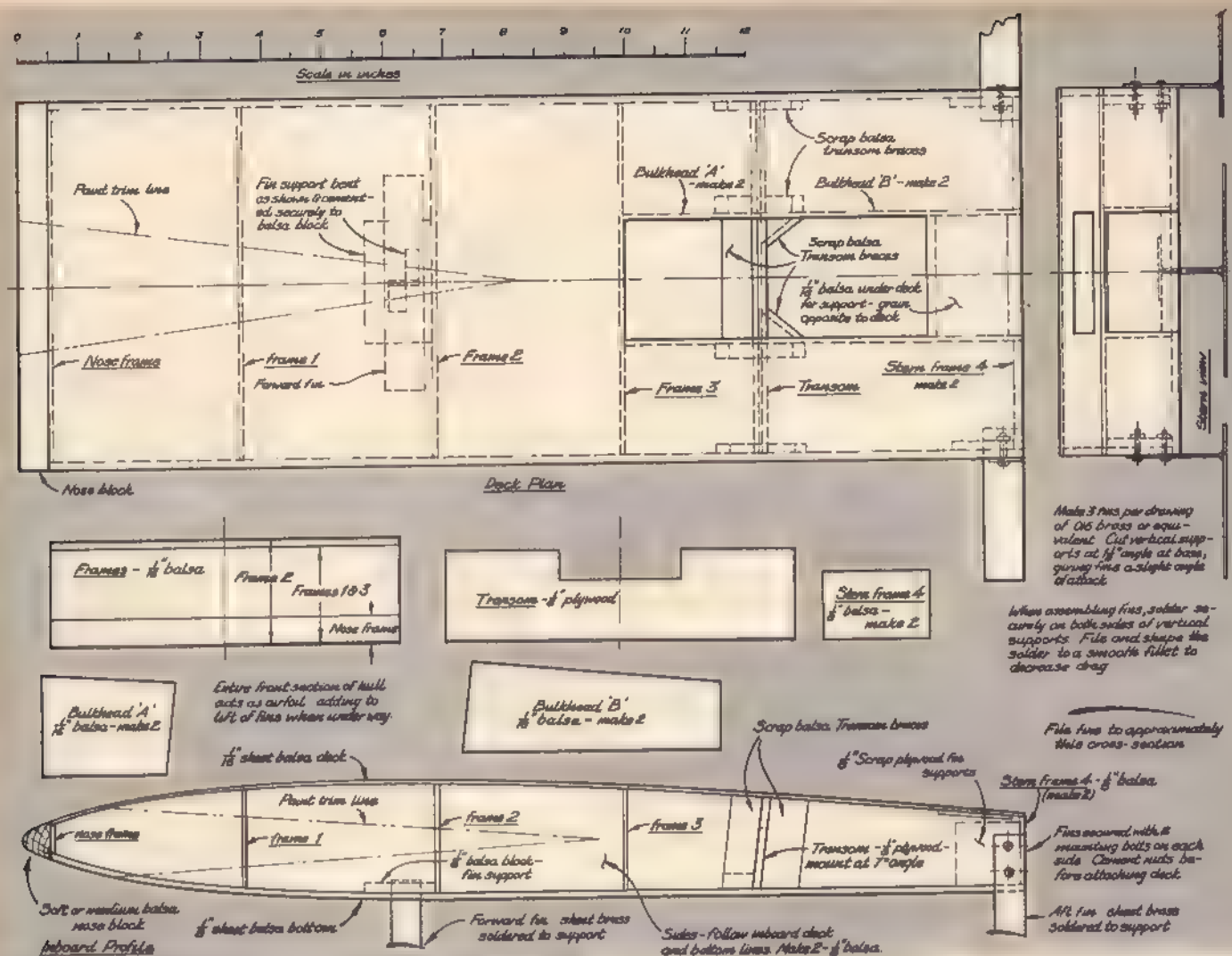
This dainty white roadster is one of world's rarest cars. Less than dozen of the Hispano-Suiza, Alphonse XIII models were built by the Spanish factory. Only one exists in U.S.



Chadwick was a great name in automobile world in 1910. Built in Pottstown, Pa., had a 6-cylinder supercharged engine of 65 hp; 100 mph guaranteed. Price \$6500.



Another great American automobile of 1910 was the Simplex, winner of many road races. The massive car weighed in at nearly 4,000 lbs., had a 50 hp 4-cylinder engine. Top 80 mph.



"Tri-Foil Terror"

By BILL BAUGHMAN

■ It had to happen—sooner or later the model fans were bound to come up with miniature hydro-fin boats. Ours is the result of much testing and experimenting. After using an air propeller on an earlier model, we decided to concentrate on the gas outboard for better running safety and stability. This particular craft was purposely designed boxy and light for fast construction and better lift while under way.

Start construction using 1/8" sheet balsa to fashion the two side panels and bottom sheet; 1/16" sheet balsa is used for the frames, motor well bulkheads and stern frames. Use a 1" board of sufficient length and width as a building board and fasten the rear flat portion of the balsa bottom sheet to this with small nails and scrap wood. Using the two sides as a guide, bend up the front section of the bottom sheet until bend matches design of side panels. Rest bow end of bottom on scrap wood and cement the two side panels in position. While bottom sheet is still secured to board, the nose block, various frames, ply transom and scrap balsa transom braces can

Full-size plans for Tri-Foil Terror are part of Group Plan #1255 from Hobby Helpers, 770 Hunts Point Ave., N. Y. 59, N. Y. (50c)



General hull construction apparent in view before decking applied. Front fin support not yet bent down.

Photo of bottom shows fins and transom details. "U" cut in transom lowers the prop for running on fins.



To bring you all the fun of hydrofoil model boating, versatile Bill developed this three-fin, flat bottomed, easily reproduced streak of lightning. She breaks loose from the surface in about 20 feet, then really winds up and goes!

all be cemented in positions shown on plan. Go back over all joints with a little extra cement to make sure the finished job holds together.

Form the fin supports reinforcing blocks from materials designated and cement in place. After this step has been completed and cement is absolutely dry, the hull can be removed from the building board. At this point, it is a good idea to paint hull with sanding-sealer and sand to finish desired. Spray a coat or two for the time being of Aero Gloss Spray Can finish, or similar product, on the exterior hull areas to which fins will fasten.

The fins themselves should be made next and installed at this point before applying the deck. Made from brass sheet stock of around .016 gauge, the three fins should be approximately the size and shape shown. Note the "wing-camber" shape that should be filed into each and the approximate angle at which they are set. At least start out with this much area, set as shown; after you have experimented a bit with your particular boat and motor, a somewhat different combination might prove

better. Maybe it would be a good idea to digress right here for a line or two to emphasize the fact that with hydro-fin boats you must be prepared to try and try again . . . but when you do finally achieve that optimum performance it's well worth the time you've invested in construction and testing.

Use a good hot iron and solder all joints and bends very carefully. Use sufficient solder to hold but not enough to leave large blobs when finished. Carefully file the soldered area to a smooth fillet when cool. Drill bolt holes in two rear fin mounts where shown and attach fins to hull sides with #221 Perfect mounting bolts, washers, and nuts. A slot is cut through hull bottom and balsa reinforcing block for forward fin support. Place fin in position, slide unit all the way up into slot as far as possible, bend two tabs at top as shown, re-inforce bend with solder, push support back down to proper position, and generously cement tabs to reinforcing block.

Cut out the 1/16" sheet balsa deck and cement into place; if you find it easier to handle, the decking can be installed in strips approximately 2" wide. Mask off fins with masking tape, after trimming, sanding and preparing deck with sanding-sealer material. A complete final overall sanding and finishing with your favorite fuel-proof dope completes the job. We used the handy Aero Gloss Spray cans for convenience and speed; but whatever you use, don't stint on the number of coats.

Now fasten your Allyn or Atwood outboard to the transom and prepare for some fun. If you have not changed dimensions and weights too much while building, using the low transom at angle shown, your boat should gradually rise up onto fins in about 15 feet from launching and ride out a full tank on the fins. Of course you must remember that with a project such as this, proper balance and top motor speeds are two "musts." Experiment with motor height and angle for the best run possible.

Bill of Materials

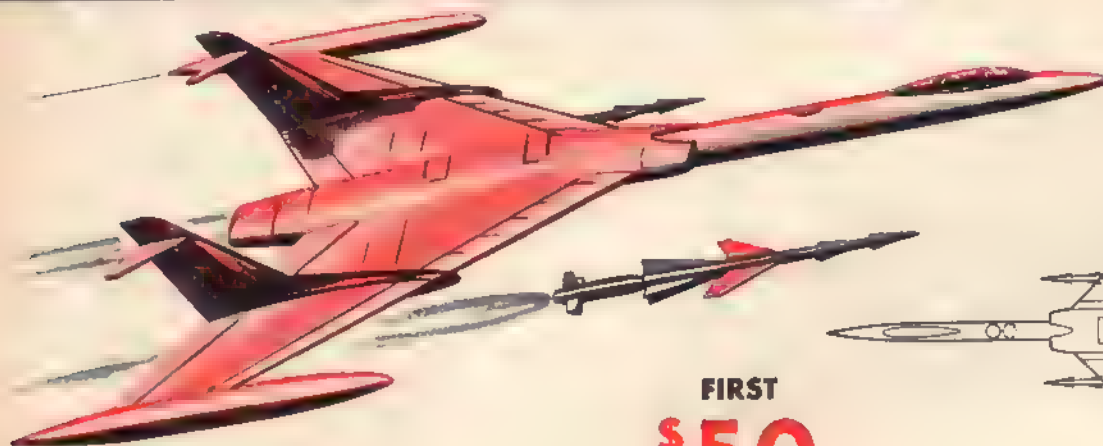
(Balsa unless otherwise stated)

1 sheet 1/4" x 4" x 36". 1 sheet 1/16" x 4" x 36". 1 piece 1/2" plywood 6" x 1 1/2". 1 soft balsa block 6" x 1" x 1". 1 piece sheet brass, approximately .016 gauge. 1 pkg. "Perfect" mounting bolts #221-2-56 x 1/2" long. Soldering equipment, fuel-proof cement, pins, building board, sanding sealer, fuel-proof dope, sand-paper, brush, small screw-eye for securing outboard safely to transom.

Equaling any thrill you'll find in modeling is that moment when hydrofoil boat rears up and roars off.

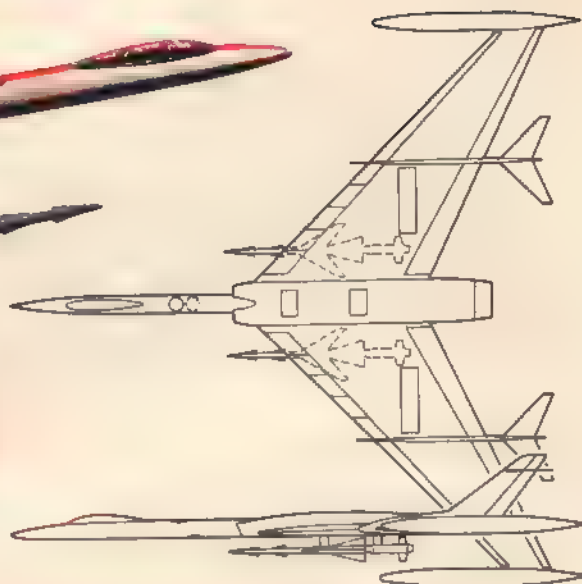


AIRCRAFT DESIGN COMPETITION



FIRST
\$50
AWARD

Super-bomber by William W. Burns of Novato, Calif. In essence a nuclear guided missile carrier, the missiles launched some distance away from ground target. Has nine jet engines of 7000 lbs. thrust each located in tandem in fuselage and drawing air through deflector-ducts located in fuselage roof. 1000 mph tops.



SECOND

\$25

AWARD

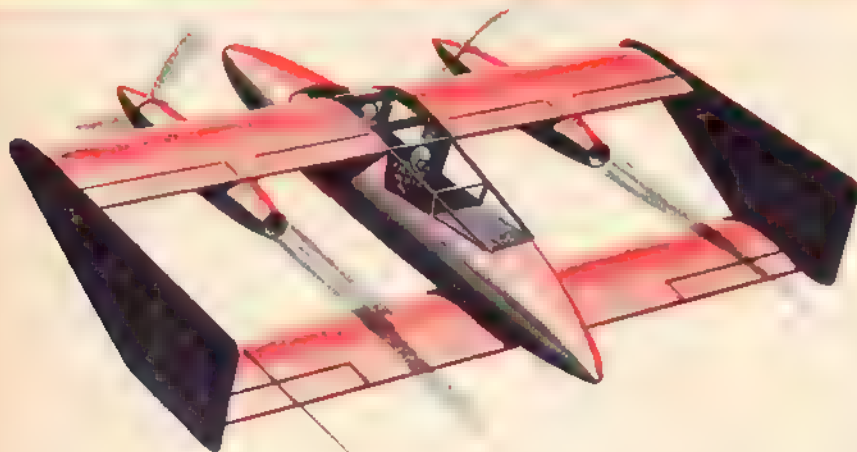
Flying-Saucer Interceptor by Glenn R. Walborn of Harrisburg, Pa. Powered by two ducted fan turbojets and two piston engines. Ducted fan engines are used for vertical take-off and landings, while piston engines drive propellers for normal flight. Estimated speed over 700 mph. Armed with rockets. Crew of two.



THIRD

\$10

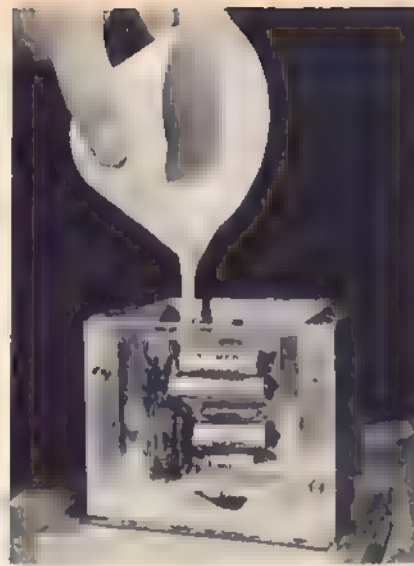
AWARD



Staggerwing by Jack Rodda of Levack, Canada. Wing location gives slotted effect, increasing lift considerably. Powered by two turboprop engines of 200 hp each. Top speed 175 mph. Stalling speed 20 mph. This design was pioneered by Maurice Delanne in France. Excellent as liaison plane and in operations from small fields. Span 30 ft.

Rules governing this "aircraft of the future" competition are as follows: Three-view sketches of the envisioned aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views. Give sketches of the complete airplane or space craft in three-quarter front and rear positions. Photos of a model of the proposed design may be included. Information on the powerplant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed by the

editors and judges. The design may be of any type; space craft, commercial, military planes (fighters, bombers, troop transports), planes for the private flyer and sporting or racing planes. The entry each month judged the most practical or of the greatest significance will receive an award of \$50; \$25 for second place and \$10 for third. Mail entries to Aircraft Design Competition, c/o YOUNG MEN, 304 E. 45th St., New York 17, N. Y. The editors regret they cannot enter into any correspondence on submissions or undertake to return them.



Tech Topics

The dwarf with a giant's muscles, known in the field of electronics as "transistor," was a laboratory marvel only a scant few years ago. Today, it is gradually replacing the vacuum tube not only in complex mechanisms of aircraft but also in radio and television sets. It is extremely rugged, capable of taking high G-loads, operates on lower power supply and by virtue of its sub-miniature size and weight is ideally suitable for installation wherever size and weight are at a premium. Working with transistors requires a great deal of precision, patience and constant checking both by visual and electronic means. The photos above illustrate only some of the few techniques required in handling them at the Hamilton Standard plant, Broad Brook, Conn. where electronic actuators for propellers, jet engines and other aircraft components are manufactured.

Photo on left shows a transistor tube being inspected through a powerful magnifying glass; center, welding of filament and grid plate is checked through a special microscope; right, a sub-unit is being sealed in plastic to safeguard it against dust and dampness. When plastic is set, enclosing the transistor and its accessories in a boxlike structure, it is polished smooth. Several sub-units are then plugged into a chassis to form the "brain box" whose function may be to control the rate of a jet engine's fuel flow, change the pitch of a propeller or any multitude of similar jobs.

National Aircraft Show held this year at Philadelphia's huge International Airport stressed U.S. military air strength. Static exhibits covering mile-long area included many aircraft until then not seen by the general public, such as the Douglas A4D Skyhawk, A3D Sky Knight, Lockheed C-130 Hercules, North American F-100 Super Sabre, FJ-4 Fury as well as a variety of other fixed wing and helicopter craft. Fly-by and flight demonstrations featured U.S. air power in mass, accompanied by booms of afterburners as jet fighters made low passes over the crowds. Main attraction consisted of two intercontinental races, the

General Electric for B-47 bombers from March Field, Calif. to Philadelphia, a distance of 2337 miles, won by Major Leonard J. Stevens at an average speed of 589.3 mph, and the Bendix Transcontinental for F-100C jet fighters which originated at Victorville, Calif. and was won by Col. Carlos M. Talbott at an average speed of 610.7 mph. Col. Talbott's speed was eight mph less than 1954 winner's due to 40-75 mph head winds encountered en route. The Thompson speed event over a straight-line course, no longer a race but a record attempt, was flown by Col. Horace A. Hanes in an F-100C Super Sabre at around 700 mph. Actually, Col. Hanes' flight was only a demonstration of the plane's capabilities; earlier he established an official straight-line speed record with the airplane at Palmdale, Calif., averaging 822.135 mph, world's first official supersonic speed record.

For motion picture story of Lindbergh's "Spirit of St. Louis" producers Warner Bros. will use two authentic replicas of the famous transatlantic Ryan monoplane. One was built by Paul Mantz and shipped to France for the LeBourget landing scenes. The other, to be used in U.S.A. sequences, was built by Joe De Bona, winner of the last civilian Bendix Transcontinental Race, and actor James Stewart, who will play Lindbergh's role in the picture. In a recent interview with De Bona at Santa Monica (Calif.) Airport, in reply to YM's query regarding the airplane's flight characteristics, he said: "The more I fly this airplane, the more respect I have for Lindbergh." . . . Piasecki Helicopter Corp. offering commercial version of its H-21 "Work Horse" helicopter. Craft now undergoing certification procedure by CAA. As civil air transport will have seating capacity for 21. Several airlines interested, among them Belgian Sabena and New York Airways. . . Douglas' huge C-133 military transport is having its fuselage tested for pressurizing in specially constructed hydrostatic tank à la de Havilland Comet, at company's Long Beach plant. . . New International round-trip soaring record

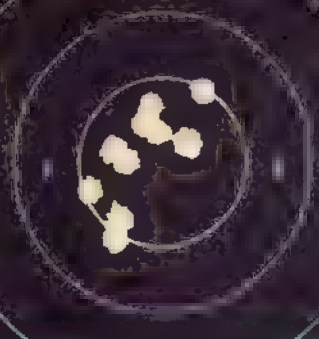
of 305 miles established in California by soaring pilot Lyle Maxey, who flew from El Mirage to Independence and back.

Weight, one of the knottiest problems in development of atomic powerplants for aircraft, may be soon licked with a new atomic reactor which weighs half that of conventional type, eliminates much of the piping, valves and other equipment which must be shielded to protect operating personnel from radiation. . . Inflatable rubber leading edge to reduce aircraft's take-off and landing speed experimented with on a Republic F-94F by Air Research and Development Command at Wright-Patterson Field. . . Air Force taking delivery of fifteen Aero-Commanders, 5-place twin-engine light transports. One to be specially assigned to President Eisenhower, who has used the airplane on several occasions for short trips. . . To probe the thermal barrier, now that the sonic has been conquered, Bell Aircraft Corp. has delivered to the Air Force and N.A.C.A. its latest research aircraft the X-2. Designed especially to investigate problems of heat at beyond sonic speed range, when aluminum loses its strength, the new airplane is built mostly of stainless steel. It is equipped with a detachable cockpit-capsule which can be separated from the plane in event of emergency.

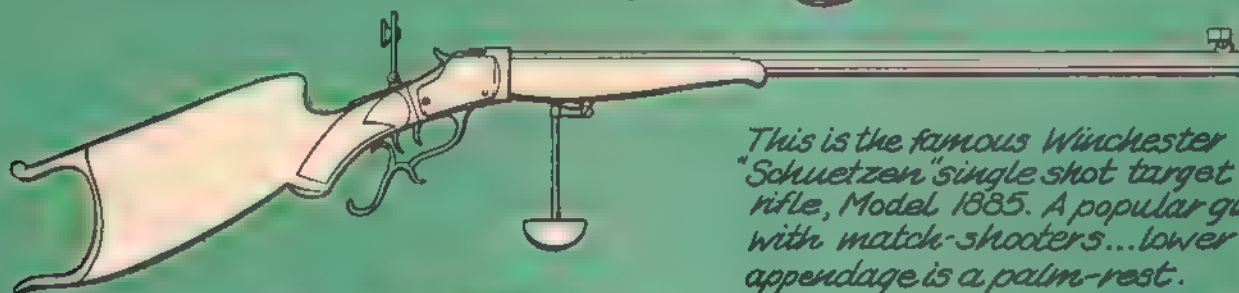
Chance Vought's new supersonic jet day fighter, the XF8U-1, has been named "Crusader." . . Testing steel by means of sending sound waves through the material and observing the pattern on a television-type screen enables Hyatt Bearings Division of General Motors to weed out faulty materials before they are processed. . . Fisher Body Craftsman's Guild has awarded 131 University scholarships valued at \$420 million since its inception in 1930. In addition to the scholarships, more than \$500,000 has been awarded to state and regional winners.

Convair's latest twin-engine transport, Model 440 "Metropolitan" now in production, essentially similar to the well-known "340". Will come in two versions, one seating 44 passengers and one accommodating 52. Difference between the 340 and 440 is in aerodynamic improvement that permits greater payload and higher speed. Also available will be a military version with wingtip jet pods.

THE .22



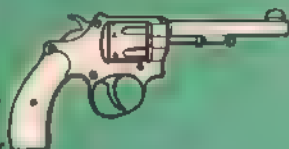
Remington "rolling block" rifle first made in 1866 as a military weapon is shown here in .22 target model. Remington .22 target pistol evolved from .50 cal. 1865 Navy model.



This is the famous Winchester "Schuetzen" single shot target rifle, Model 1885. A popular gun with match-shooters...lower appendage is a palm-rest.

Popular just before the turn of the century, the little Smith & Wesson .22 was named "Ladysmith".

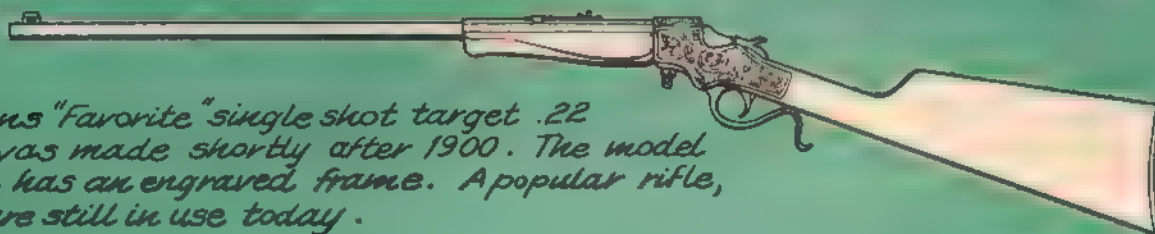
Its use in underworld circles caused S&W to discontinue its manufacture.



Sharps 1850 .22 pistol was a 4 barrel "pepperbox"... firing-pin rotated to fire each barrel separately.



Hardly a sporting arm but one of the first .22s was Reid's "My Friend" knuckleduster - 1865, 7 shots with built-in brass-knuckles!



Stevens "Favorite" single shot target .22 rifle was made shortly after 1900. The model shown has an engraved frame. A popular rifle, some are still in use today.

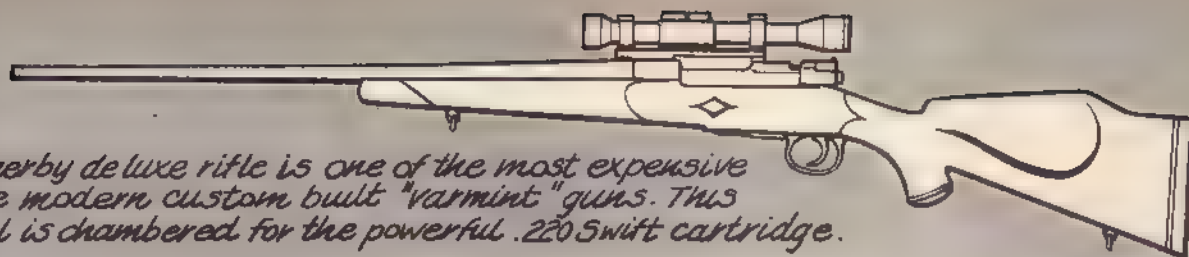
After the close of the Civil War the manufacture of the metallic cartridge led to the development of numerous new calibers. One of the most popular and widely used of these was the little .22. This cartridge first found a home in the many "derringer" type pistols. The small size of the .22 gave an impetus to the design of smaller and more compact handguns. Soon the manufacturers realized the usefulness of this cartridge for target and small game shooting, and thousands of various .22 rifles, most of them single-shot models, appeared on the market.

Shortly after the turn of the century, high-pressure smokeless powders were first manufactured in quantity and the development of the high-velocity .22 cartridges soon followed. The purpose of these special .22 cartridges was twofold: 1) the high-velocity bullet would disintegrate upon striking a solid object rather than ricocheting as the ordinary .22 bullet would, and 2) the high-velocity bullet was particularly useful in small game or "varmint" hunting due to its high speed and flat trajectory. This feature allowed the hunter to shoot wary game at a much longer distance

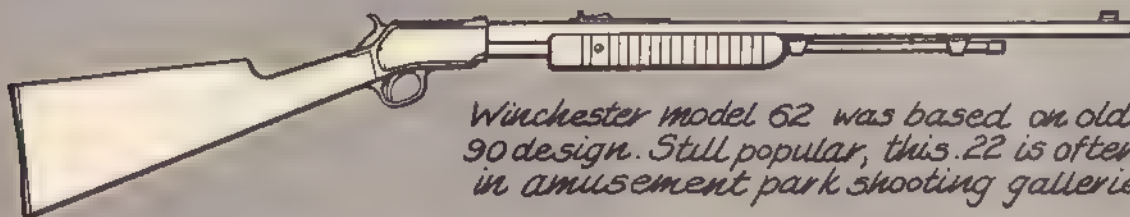
and with far greater accuracy than with the ordinary .22 cartridge. Modern .22 high velocity cartridges are center-fire and due to their larger case size will not chamber in the ordinary .22 rifle.

In the past few years the .22 cartridge has been adopted by a select group of hand-loading shooters who have developed it tremendously well toward the very ultimate in accuracy. Shooting custom-built rifles from special rests, these "bench-resters" put all their shots through the same bullet hole in the target and their scores are computed by measuring the extreme width of the hole with calipers. Most of these boys load their own .22 ammunition to discover just what bullet weight and powder charge combination will give the best results. This data proves extremely useful to the manufacturers in producing better ammunition for the ordinary shooter.

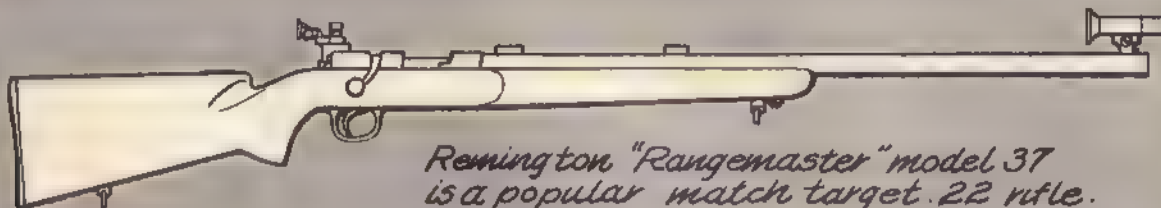
The guns shown on these two pages represent but a tiny cross-section of the hundreds of thousands produced for the .22 cartridge. These are some of the best known and shown at about one-sixth actual size—J. M. Triggs



Weatherby deluxe rifle is one of the most expensive of the modern custom built "varmint" guns. This model is chambered for the powerful .220 Swift cartridge.

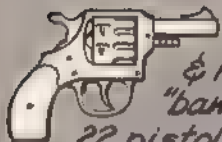


Winchester model 62 was based on old model 90 design. Still popular, this .22 is often found in amusement park shooting galleries.

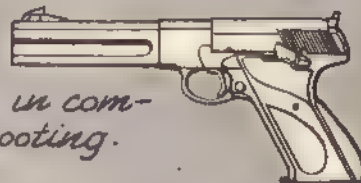


Remington "Rangemaster" model 37 is a popular match target .22 rifle.

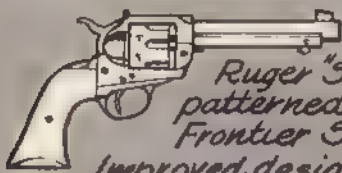
Harrington & Richardson "bantamweight" .22 pistol is an inexpensive model popular with campers & hunters.



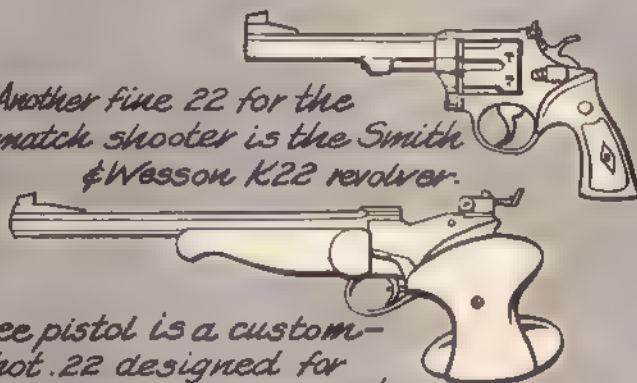
Colt Match Target .22 automatic pistol is widely used in competitive match shooting.



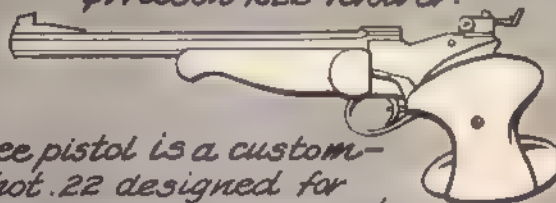
Ruger "Single-Six" is patterned after Colt's Frontier Six Shooter. Improved design makes it a rugged, dependable .22 arm.



Another fine .22 for the match shooter is the Smith & Wesson K22 revolver.



Haemmerli free pistol is a custom-made single shot .22 designed for super accuracy. Large grip is moulded to fit the individual shooter's hand.



Shown below full size are some of the most common .22 cartridges. The three larger cartridges are typical of the high velocity .22 cartridges. At the right is an enlarged cutaway of the .22 Long rifle cartridge - the hollow-point type bullet is shown.



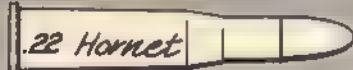
.22 BB Cap



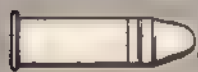
.22 Long Rifle Skot



.22 Short



.22 Hornet



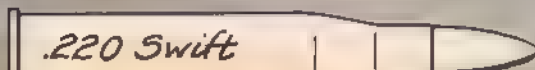
.22 Long



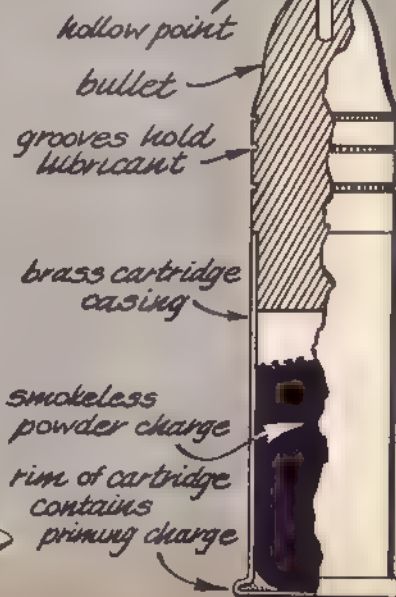
.22 Savage



.22 Long Rifle



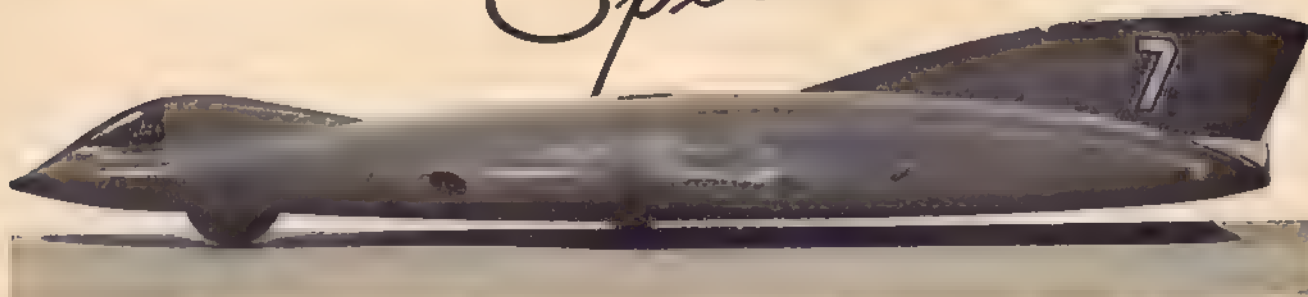
.220 Swift



J. Figg

Bonneville

Special



If the delta is the shape of things to come, then you'll be ahead of the field with this unique bi-wheeled record car which provides all the racing thrills of the real ones

■ The crowd was tense and pushing against the ropes. "Okay, stand back now . . . she'll be coming through!" one of the policemen shouted. The crowd listened for the engine's roar. Seconds later we heard it, and then it appeared on the distant horizon.

We could see the flag drop as the car streaked across the starting markers of the speed course. The sight of those man-made tons of power on wheels thun-

dering down the course drew gasps from the crowd. We all guessed that this was it. This could only mean a new straight course speed record.

Isn't it amazing how we can visualize in the back of our minds what may be today's fantasy but is so often tomorrow's reality? The delta shape, as we have often heard remarked, is the shape of the future; here with this model car project we have molded that shape into a highly streamlined and functional body.

The car not only is unusual in its configuration but also in the wheel arrangement. The engine directly drives the rear wheel and the car rides on this drive wheel plus the two closely coupled front wheels. Those side stabilizing wheels come into action when the car banks to the right or left. The angle of bank at which a stabilizing wheel touches the ground is about 4 deg. This may seem slight, but it was found that a larger angle would serve no useful purpose and would only be detrimental to the car's efficient running. Another point of interest worth noting is that at no time does the car travel on more than three wheels. For when it is riding on a stabilizing wheel it is utilizing only one of the front wheels and the drive wheel.

Recently we were speaking to one well acquainted with full-scale race cars and were informed that similar ideas in wheel base arrangement have been tested with some degree of success. It indicated that

such an arrangement is practical and perhaps more efficient than the conventional set-up.

After many test runs with our model car we certainly were pleased with the results obtained. The speed of the car was consistently over 40 mph on a 20 ft. radius tether. With engines up to .09 displacement we would estimate that 60 mph speeds are possible.

Engines larger than .09 displacement are not recommended, mainly because the model is made of wood and would not long withstand the pummeling of much higher ground speeds. If you're the type that likes things slow and easy with maximum consistency, install a small electric motor. Chances are your maximum speed will be no more than about 10 mph, but then you have the distinct advantage of being able to free-run the car with ease, which in itself would have a certain fascination.

The all-wood construction certainly has every other advantage—the important one being that it is within the capability of every model builder for no special tools are required nor are any special skills essential. Even the method of assembly is within the capabilities of a novice.

Before starting the construction of the car decide on the engine you would like to use and select your materials accordingly. The larger your engine is the harder and heavier should be your selection of wood. All-balsa construction is



only recommended for engines of .065 displacement or less.

Begin the construction of the car from the bottom up. First cut the car bottom to the required outline and make cut-outs for the front wheels and drive wheel. Make front wheel assembly and install in position. Then bend stabilizing wheel axles and cement in place.

Assemble engine firewall and bolt engine and drive wheel to it in order to obtain the correct position of the drive wheel. Secure nuts for the engine bolts to the back of firewall for ease of engine installation and removal. Remove engine and drive wheel from firewall and then cement the firewall securely in position.

Car sides consist of two thicknesses of wood, the inside thickness being recessed for the top sheeting and tail block while the outside thickness serves as a guide for obtaining the desired basic shape of the car. When completed cut out at the rear for the exhaust tubes. Then cut out blocks and sheets to form stabilizing wheel fairings, and insert wheels and solder retaining washers to axles.

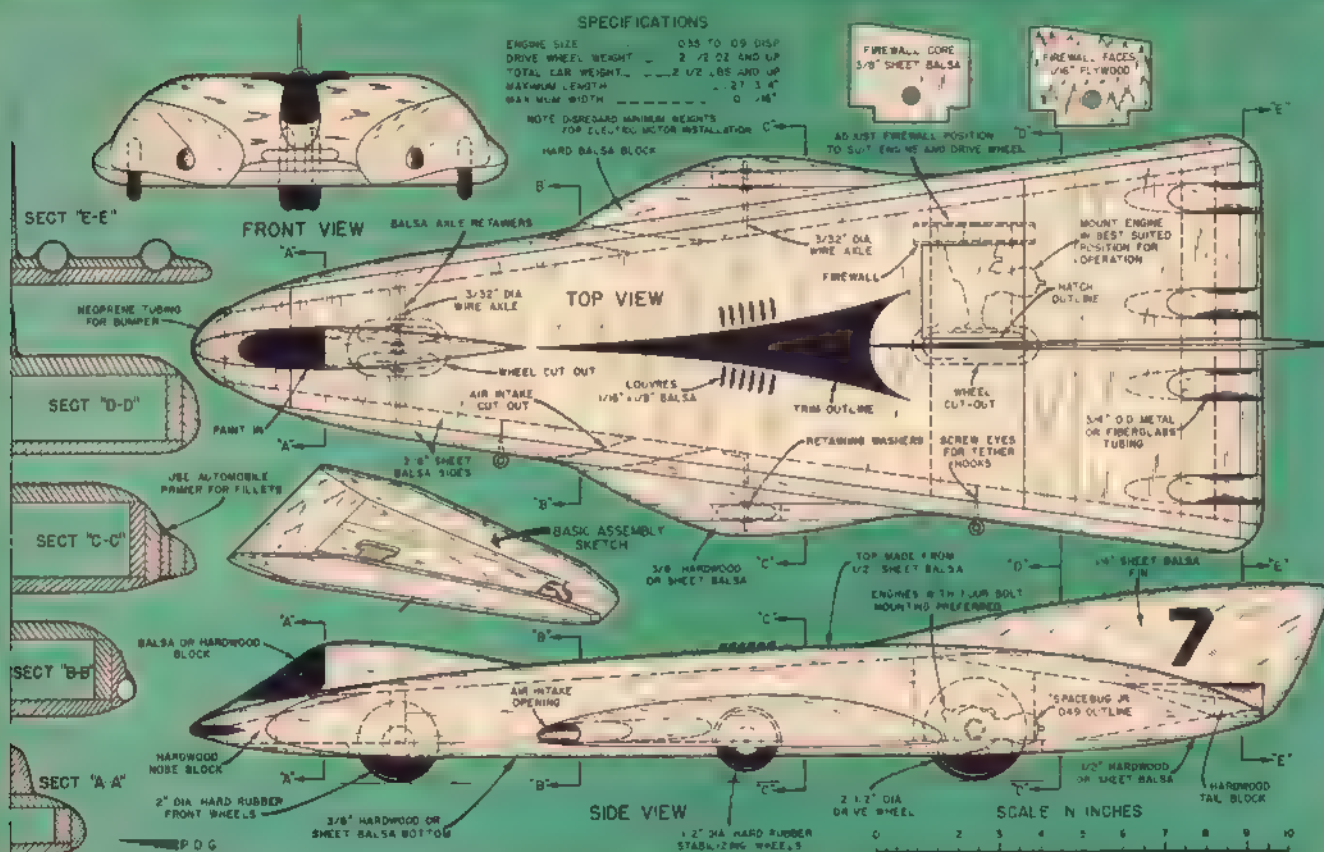
The fin is cut from $\frac{1}{4}$ " sheet and is shaped and sanded to an airfoil shape. Cement the completed fin to the top of the car and fillet the joint with silk and cement. The driver's cockpit can be made from scrap block.

The front bumper is made from a piece of neoprene and the nose of the car is recessed to fit it into; cement firmly in place. The louvers are cut from $\frac{1}{16}$ " x $\frac{1}{8}$ " balsa and cemented as shown.

If a glow-plug engine is used fuel-proof dopes will be required. Begin by applying two to three coats of sealer, sanding smooth between each coat. Then apply three to four coats of clear fuel proof dope. In applying the colored dope brush on at least five coats of medium consistency and fine-sand between coats to eliminate the small rough spots. After the last coat has thoroughly dried rub the finish down with Duco No. 7 rubbing compound to obtain a high gloss finish.

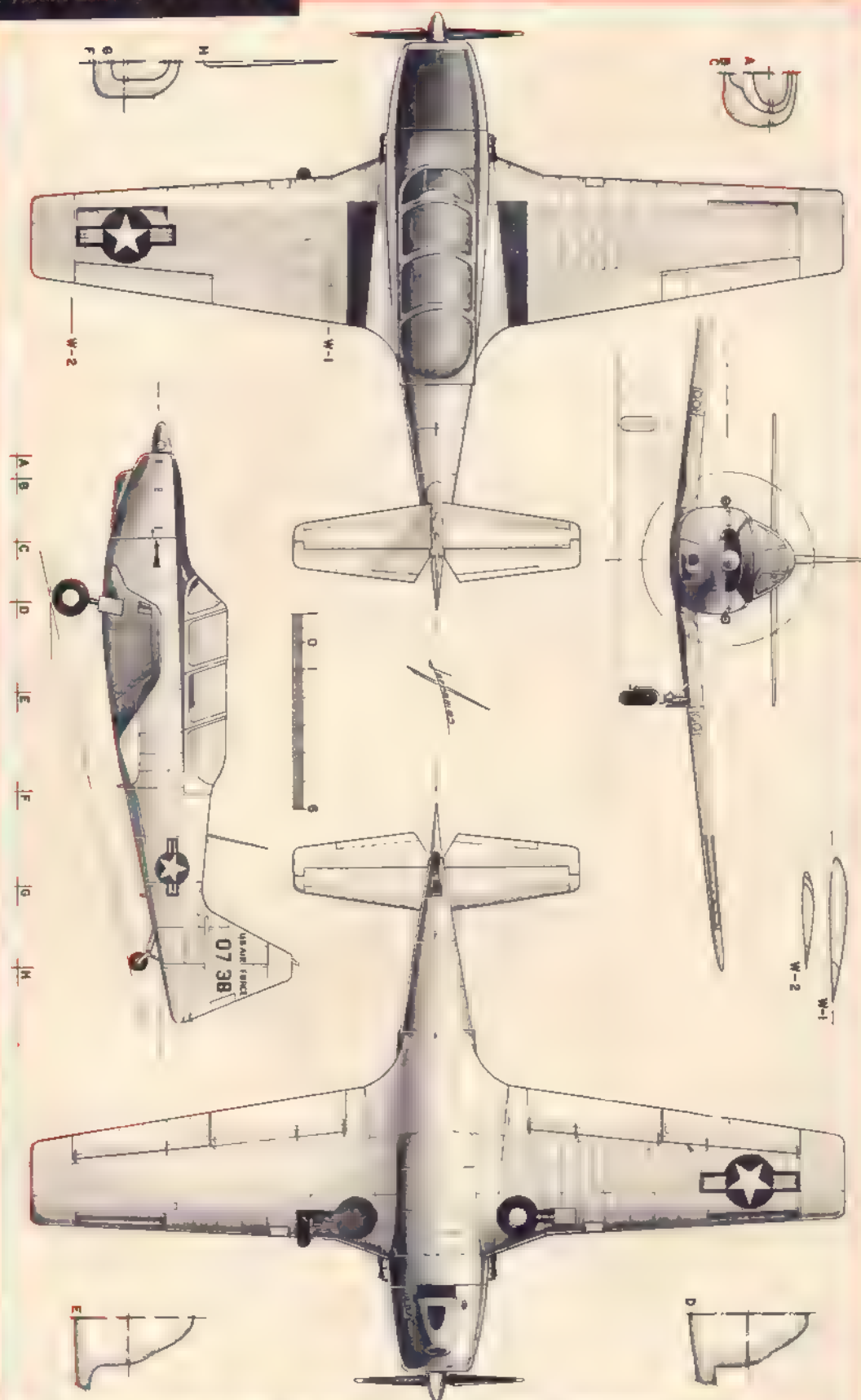
(Continued on page 64)

"Jet exhausts" serve to vent the power plant and give vehicle tomorrow's look.



SCALE VIEWS BY JEFFERIES

TEMCO YT-35



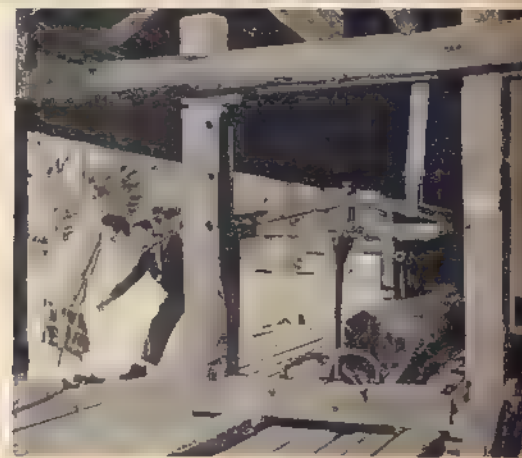
Designed especially as a primary trainer conceived to operate, YT-35 Buckaroo has characteristics and performance of heavier military airplanes, with modest fuel consumption of only 2 gallons per hour.

Only a few produced to date; one version equipped with two .30 machine guns in wing and ten 2.75" rockets serves as light, highly maneuverable ground support plane.



Young Man Explores "Days of Yore"

■ To the young man of today raised in an age of automation, automobiles and airplanes, a trip to such a spot as Old Sturbridge Village in Massachusetts is a revealing experience. He begins to wonder what was "good" about the "good old days"—judged by today's standards. Located within hailing distance of a super-highway, the Village has been virtually transplanted from the 19th century. Occupying a 500-acre tract of land among woodlands and meadows, it was erected as a monument to New England's early pioneering days, authentic in its architecture and crafts. Many of the buildings are over 100 years old, others are accurate reproductions of the era. Here, the young explorer into the past will find an old grist mill with its water wheel driving the millstones from power supplied by a small pond; a saw-mill, the only metal part of which is the vertical saw-blade, the entire actuating mechanism being constructed of wood; a blacksmith's shop where stage coaches had their huge wooden wheels bound in iron hoops; a printing plant where even now the local paper is printed on a hand-operated press, and many other relics of days gone by attesting to the "rugged" existence led by our ancestors.



HOBBY MODEL WORLD

DOPE CAN

■ Gentleman there in the balcony wants to start a rocket society. He's calling for all Canadian rocket fans to join hands and get the "Rocket Society of Canada" underway. R. W. Schneider, 20 Patterson St., Amherst, Nova Scotia, is issuing the rallying call for "Project Rocketron." Has a real ambitious plan in mind with special places for "radio-fans." Blast off, men.

Gold Mine for Films. Could we interest your club in more than 77 hours of free motion picture films? Subjects like "Thunderjets Blast Tactical Targets," "Jet Scramble," "Flying Midgets" (USAF model plane meets), "Taylor Model Basin," "The Story of the Helicopter" and on and on. Well, tell your program chairman to latch onto a copy of "Motion Picture Films—Cleared for Public Non-Profit and Non-Sponsored Television Exhibition." This publication contains Air Force films which may be borrowed by civilian organizations from A. F. Area Film Exchanges. HQ for the operation is 1356th Film Library Flight, Air Photographic and Charting Service (MATS), U.S.A.F., Orlando AFB, Fla.

Masonite for Model R.R. Got tipped off to the fact that many model railroad fans are using Masonite "Peg-Board" panels successfully for layout bases. These are the panels with scores of small holes in rows, evenly spaced 1" apart and available at lumber yards.

Quick wiring and changes in equipment locations are made possible by the large number of holes. No boring of holes and consequent marring of the surface, see. The $\frac{1}{4}$ " thick panel should be framed underneath with 1 x 2" strips, then set on saw horses of desired height. Tracks can be wired or bolted down

through the holes . . . which provide a flexibility of attachment not possible with a solid sheet. No splinters, either.

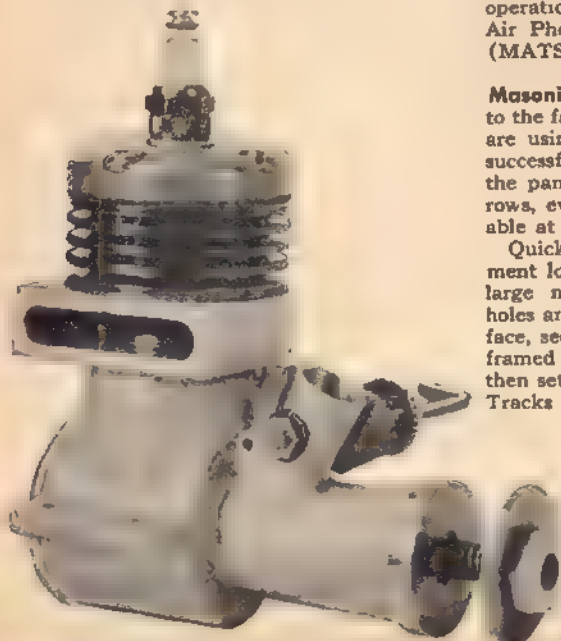
Sad the Day. Every year the Garfield, N. J. Recreation Department holds a model sailing regatta in the County Park pond (this is a sizable one). Well, who sailed off with top honors this time? Nine-year-old Andrea Krivack, the only feminine entrant. And what kind of a craft did she enter? Flat balsa plank with pointed bow, plus some nails, sticks and sailcloth. And how was her time? A new record of 1 hour, 12 minutes.

And what are the young sailors of Garfield saying these days?

Absolutely nothing.

Model Retriever. Dallas Sherman's "PAApoose" along with D.S. covered the Southwest Championship modelplane meet at Dallas and both apparently had a fine time. You'll remember this craft as appearing on our August cover. Dallas thought we'd all be interested in the actual performance of the cross-country trip of 2,920 miles (no, he doesn't sell Mooney Mites!): "Believe it or not, the range and direct cost figures live up to those advertised. As to speed, the figure that counts is actual block-to-block, which for the PAApoose and me comes to 100 mph (honest) including all the

Original design engine is the "Copperhead" by Karl Spielmaker of Grand Rapids, Mich. Displacement is .15 cubic inch, bore is .600 inch, stroke is .550 inch. Powerplant turns 8 inch prop at 11,000 rpm. It was machined on a Craftman 8-inch lathe; 40 hours went into it. Karl wanted to keep engine as different in appearance as possible. It has flown control line model successfully. He has a K&B .15 that outpulls it, but says, "I'm still proud of my engine."



Most Realistic Model—\$25 Award Winner

Hank Golen of Astoria, N. Y. put year and half of spare time in on this brass hulled sub. Craft is 5'4" long, 7 1/2" wide. To be radio controlled. Hank says it will take 15 lbs. of lead before she will make like a real sub and go under water. At time photo taken she had not yet been in operation.

Each month "Young Men" pays \$25 for the most realistic model photograph. Send your entries to Most Realistic Model, c/o Young Men, 304 E. 45th St., New York 17, N. Y. Submit only black and white prints, on negatives.



A single tiny flashbulb, a General Electric M2, was the only source of light used in this unusual night shot of a North American F-86D Sabre jet. Pulsing effect behind

jet tail pipe is caused by shock waves
produced as hot gases from G.E. J-47-33
jet engine collide with atmosphere. 1955
saw 25th anniversary of the flashbulb.

usual hard-luck stuff like head-winds, getting more-or-less lost enroute, weather diversions, etc., and etc. Conclusion—the Mite is a mighty fine little airplane."

Checking over Dallas' figures we find that it costs him \$0.0127 per mile to operate his plane. Many a team race entrant wishes he could make the same statement!

Hey, J. T.! "YM's" business office asks us to advise Jonathan Thompson that it's holding a perfectly good check (for money, yet) in his name. Please write giving old and new addresses, old boy.

Northwest Regionals. The Exchange Club of Seattle's modelplane meet drew more than 10,000 spectators who watched 126 contestants vie for 66 trophy cups given as 1st, 2nd and 3rd place awards in 22 events. Best finished entry was a 4-motor Constellation; the owner received a chromed scale model of the B-52 given by Boeing. Winner in the 15-or-under class was presented with a trip to Hollywood by a movie company in cooperation with the local unit of the

Air Force Association.

Site of the competition was the Sand Point Naval Air Station. Preparing already for the next season, the Navy is constructing a carrier platform which can be used for all meets and also for weekend practice by any contestants in the area!

The Exchange Club collected \$400 and spent about \$600 to produce the event. The difference of \$200 was considered quite reasonable for such a meet, according to Exchange officials. Cheers for the Exchangeites of Seattle.

Some Modell When North American employee W. T. "Dub" Rouse of Engineering Flight Test found his son wanted a model of an aircraft carrier he built him one—14 feet long! The model of the carrier *USS Forrestal* has movable elevators and plenty of room for plane models above and below deck. Guess who's the most popular young fellow in Westchester, Calif., right now?

Some Radiol The Air Force's Air Research and Development Command has

come up with a sensational new combination receiver and transmitter that can transmit up to 100 miles, yet has a volume of 20 inches (that's less than 3 x 3 x 3!). Weight is only 15 ounces. Are you listening, R/C'ers? A 2½ lb. mercury cell battery supplies power. The new set, the URC-11, utilizes six sub-miniature tubes; it's expected to be used primarily by pilots of fighter aircraft whose cramped cockpits offer little space and who must carry all their survival equipment in a small seat-style kit.

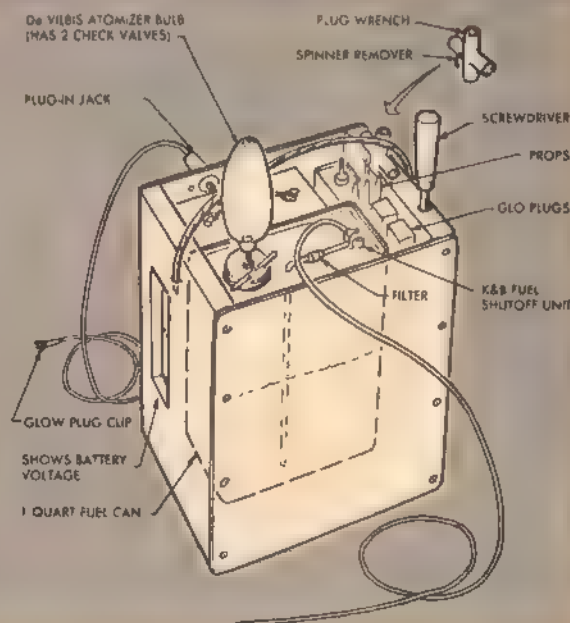
Upon a forced landing or a bailout the pilot hooks up the batteries, pushes a button to talk or he can set the transmitter to broadcast a continuous tone signal which rescue craft can use to fix his position.

Plastic vs. Wood Kits. Philadelphia's Electronic and Hobbycraft Stores sponsored a letter-writing contest primary purpose of which was to sample the market for trends in the plastic and wood kit fields. Here are the results reported by E and H to its customers:

"You were to write a letter to us stat-

SEEN AT THE "NATS"

At the '55 Los Alamitos National modelplane championships PAA ran off a control line endurance event. Twin boom job won for R. J. Helst of Ft. Worth with 1 hour plus flight. Many unique servicing units were used at stunt and combat events. This by Rene Forrester, Wichita, used atomizer bulb to build pressure in fuel can.



HOBBIES-IN-ACTION

\$25 Award Winner

C. G. Moffat of Westwood, Calif., produced this appealing shot with Mt. Lassen 35 mi. in background. Camera was Master Reflex; Kodak Tri-X film; 1/250 sec. at f/16. Flying site at 5,000 feet which makes "take-offs a lot of grunt and groan work." Live Wire Trainer with Cub .14, Mini-Mac receiver; Cameron Compound escapement.

With your photographic entries give full details on how picture was made. Send them to Hobbies-in-Action, c/o Young Men, 304 E. 45th St., New York 17, N. Y. Only black and white prints, no negatives or color shots, please. We pay \$25 to winning picture each month.



"My Favorite Model"

"This model of a deHavilland Mosquito night fighter was constructed from an old Cleveland kit. Having seen many scale models fly underpowered, I installed two Fox .59's. Span is 40"; it weighs 4 lbs., 1 oz."—Bill Kirn

Do you have a favorite model? Tell us about it and include some good clear photographs (black and white only, please—no color). Send your entry to My Favorite Model Dept., c/o Young Men, 304 E. 45th St., New York 17, N. Y. We will return any contributions not used, but cannot assume responsibility for them (don't send negatives unless requested). We pay \$25 for photo(s) and story that appear here. Any type of model is eligible, working or non-working, plane, boat, car, or train.

Hobby Model World

ing 'I Prefer Plastic Model Kits' or 'I Prefer Wood Model Kits.' As you probably all know, plastic model kits today have almost pushed the wood model kits off the market. But, strange as it may seem, we received nearly 1,000 letters, and they were not overwhelmingly in favor of the plastic kits, as you would expect, with regards to the percentage of sales.

"The actual breakdown was 51% in favor of the wood kits and 49% in favor of the plastics. The youngest contestant was 7 years of age, and the oldest in his sixties. There were grammar school and high school students, college students, fellows in the Armed Forces, doctors, lawyers and maybe even an Indian Chief. Some of the letters were humorous, most of the letters were serious, and some were very bitter.

"Winners were first—D. Lawrence Willey, Spencer, Mass.; second—William G. Harrell, Perry Point, Md.; third—Jerry Lloyd, Paxton, Ind."

Additional gift certificates went to seven runners-up. Incidentally, we note with interest that E and H is giving a free subscription to its "Iron Horse" and "A-B-C Digest" publication to all customers who purchase \$10 worth of merchandise.

New Britain Girls to Run Meet. Thanks to the "CCAMA News" we encountered Mernlyn Adajian's fascinating article with the aforementioned title. It's too good to keep only in the Nutmeg State, so we run it in toto:

"At a Jalopy Race the girls of the New Britain Model Airplane Club will act as officials. They will pair off the teams, start races, penalize for high flying, count laps, etc. This is the first time the girls have been allowed to 'man' such important posts.

"For some reason, husbands are not very good at explaining the finer points of model flying to wives who so generously accompany them to the field. These women who want to be Real Pals to their husbands have to learn the game all by themselves. Having been through the mill, let me pass along what I have learned about Jalopy racing to other

wives. With this simple knowledge wives will be able to amaze their husbands at the very next Jalopy or team race.

"First of all, a *Jalopy Race* is similar to a *Team Race* except that an airplane built for a team race is made from a 'do-it-yourself kit.' However, these kits are available only in a few body styles. A plane for a Jalopy race requires more talent as it is made from an original design. It is usually designed, built and flown all in the same day. Any lumber found around the house can be used. Any carpenter can quickly cut out the parts from a flat board. Nails are not necessary as the wing and tail are held on the body with pieces of inner tubes. Incidentally, these ships are referred to as 'precision instruments' when in the hands of a boy over 16; the word 'toy' is permissible at all ages under 16.

"The object of the game is to determine the 'survival of the fittest.' The winner is the man who can turn around in the center of the circle the required number of times swinging the airplane on the end of the string the fastest."

(Men—she's describing gas powered U-control flying!)

"This must be done while he dodges the arms and strings of the other flyers. If you think this is easy get together with three other girls, stand back to back in the center of the kitchen and each swing dust mops held at arms' length for 170 turns.

"*The Starter*—these engines are not started with the foot as on modern autos, but are cranked from the front as with old-time cars. The planes, however, are often ended with a heavy step of the foot.

"*The Stoooge*—this is the man who holds the airplane as other ships take off over his head.

"*R.O.G.*—abbreviation of a fancy name the boys have set up for themselves to make it all sound good. Literally it means Relaxation of Gentlemen."

International Outlook at Home. For some strange reason the Academy of Model Aeronautics' annual qualification program to select teams to represent this country in the international F.A.I. Power, Nordic Glider and Wakefield competitions always runs into a number of anags. Why this is so is hard to understand, but

the unfortunate truth of the matter is the A.M.A. has suffered and will continue to suffer from the very bad publicity that has come out of the yearly eliminations.

This year a very strong protest was registered by Virginia flyer Frank Parmenter which concerned mostly what he considered inadequate take-off facilities at the Eastern semi-finals.

Out in Northern California a number of proxy flyers who had been extended invitations to work at the finals in Germany were suddenly notified at the last minute that there was no transportation for them.

Perhaps the stakes are too high (free trips) for too few players. Maybe the Academy should sit down and ask itself if this is its most important function. If it is, it should do a better job. If it isn't, it should pay more attention to its domestic problems.

We're Glad to Note. We showed you Sherwood "Woody" Fuehrer of Cranston, R. I., in our August '54 "Speaking of Hobbies" section along with his mechanical man. We note that he won regional honors in the Ford Industrial Arts Awards competition with Gizmo, his robot. Woody would like to be an electrical engineer and someday travel to the moon.

Night Control Line Flying. Owensboro, Ky. All American Aeronauts, a model-plane club, are plugging for more night U-control flying. Simple as pie, they say. They use six 6-inch floodlights positioned in a six-foot circle around the flyer

placed at 60 degree intervals on 2' pipes. Lights are turned up to a 30 degree angle with the ground. Reports Secretary Harvey D. Denton (1108 W. 12th St.): "We have flown five man combat and stunt at night and you can see plainly a plane anywhere including at the very top of the circle. We'll be very glad to answer any questions about our night operations."

Canadian Modelers—Note. New address for the Model Aeronautical Association of Canada. Send inquiries to President F. S. Lillman, 502 Charlotte St., London, Ont. Don Mackenzie is the public relations director for Canada's governing body for model aviation.

Plans for Navy Ships. Good news for all model boat fans is word that official U. S. Navy boat plans are now available for a nominal charge of \$2.50. These are extremely large, extremely accurate and detailed drawings. A check or money order must accompany all orders which should be addressed to Models, Training Aids & Exhibit Section, Bureau of Ships, Department of the Navy, Washington 25, D. C. Remittances should be made out to the "Treasurer of the United States." Here is the latest list of available plans:

Aircraft Carrier, CV17 WASP Class, 27,100 ton
Aircraft Carrier, Small, CVL22 INDEPENDENCE Class, 12,000 ton.
Aircraft Carrier, Escort, CVE105 COM-MENCEMENT BAY Class, 10,900 ton.
Battleship, BB63 USS MISSOURI, 45,000 ton;
BB61 USS IOWA, 45,000 ton; BB57 USS SOUTH DAKOTA, 35,000 ton; BB55

USS NORTH CAROLINA, 35,000 ton.
Heavy Cruiser, CA 68 BALTIMORE Class, 13,600 ton.
Light Cruiser, CL55 CLEVELAND Class, 10,000 ton.
Destroyer, DD348 FARRAGUT Class, 1,375 ton; DD421, BENSON Class, 1,620 ton; DD398 McCALL Class, 1,500 ton; DD445 FLETCHER Class, 2,050 ton; DD710 GEARING Class, 2,400 ton.
Destroyer Escort, DE51 Class, turbo-electric drive, 3" guns, long hull, 1,400 ton; DE162 Class, diesel electric tandem drive, 3" guns, long hull, 1,240 ton; DE217 Class, turbo-electric drive, 3" guns, long hull, 1,400 ton; DE 224 Class, turbo-electric drive, 3" guns, long hull, 1,450 ton; DE264 Class, diesel-electric tandem motor drive, 3" guns, short hull, 1,150 ton.
Submarine, SS170 CACHALOT Class, 1,110 ton.
Minesweeper, AM299 Class, 185 feet.
Motor Minesweeper, YMS 446 Class, 138 feet.
Patrol Craft, PC1121 Class Sub-Chaser, 173 feet.
Motor Torpedo Boat, PT, 78 feet.
Landing Ship Dock, LSD22 FORT MARION Class.
Landing Ship Tank, LST542 Class.
Landing Ship Medium, LSM354 Class.
Landing Craft Infantry (Large), LCI(L)351 Class.

Panama Modeling as Reported by Boni.

Fine communication comes in from a friendly modeler from Panama. We let him tell you his story in his own way:

"Just thought I'd pass along some 'dope' on modeling here in the Republic of Panama to you people who keep us so well informed on modeling in the USA . . . First of all, an introduction. My name being Bonifacio Haasan Jr., everyone prefers Boni for short, so it stuck. I am a native Panamanian, 19 years old, attending the University of Panama (Architecture), fond of girls, modeling, listening to the radio, parties, and exploring.

What's Your Hobby?

Tell us about your hobby if it is of special interest to mechanically minded young fellows! Send photographs and details on how you got started to "What's Your Hobby," c/o Young Men, 304 E.

45th St., New York 17, N. Y. We pay \$25 for first photo and \$5 for extra photos used. Entries not used will be returned, but we cannot be responsible for submissions.



"I got interested in chemistry about 4 years ago," reports Kai Schwarz, Gaithersburg, Md. "Since I first started in my hobby I have been mostly interested in rockets on which I have been working for some time. I have succeeded in finding about 4 different usable rocket fuels and have made some rockets 2 feet long. At first when I started making rockets I would set

them off in our back yard pointing across a field until some of them started to explode. Unfortunately my parents and our neighbors did not appreciate this so I was made to light them off away from any houses. All in all I have made some 300 experiments and tests and have gotten many enjoyable and educational hours of fun with my hobby."

HOBBY CLUB EMBLEMS



After lapse of three years, little Rhody Aero-Engineers of Providence, R. I. were reorganized in January 1955. Present membership is 37 and growing fast. Has building facilities at H.Q. located at 40 Edgeworth Ave. Data by E. Charpentier.



North Jersey Radio Control Club, at 490 Fairfield Ave., Ridgewood, N. J. was organized in 1954. Present membership is 60. Interested in all phases of R/C with predominance in planes. Proportional control used almost exclusively.



Primary aim of the Flying Aces, Hays, Kans., is stimulation of interest in model building for beginners. Chief interest: hand launch gliders and rubber power. More experienced members work R/C. Dale K. Park, Box 272, Hays, Kans.

Send your club insignia—with info on your group. Young Men will pay \$10 for each emblem and report used here. Type data and

send only printed emblems or decals—no pencil or rough sketches can be used. Sorry, no

Hobby Model World

"Model airplanes are a hobby which is just catching on in Panama and real honest to goodness modelers are few and widespread, making us an exclusive and rare lot. I personally know of only two organized clubs, besides my own group known as the Air Clowns or Payasos Del Aire in Spanish.

"We are a small club of only 8 members, pledged almost exclusively to stunt, scale and combat control line flying and some rubber activity. We also dab in model boating, helicopters and such gadgets once in awhile.

"Supplies—there are only two sources of model supplies here in Panama, small sections in two stores which as an experiment are feeling out the hobby line. One of them, Crawford Agencies, is headed by an American, Mr. Wallace Crawford, a solid señor who wants to stimulate modeling as much as he can. The other, Felix B. Maduro, is a women's gift and toy store that opened a small hobby section and is apparently satisfied with the warm reception we modelers have given the idea. However, they committed the blunder of ordering dozens upon dozens of rubber kits—and no suitable rubber!—and also of ordering insufficient amounts of gas kits.

"Due to heavy import duties, some prices run high, as in the case of an OK Cub .049A which costs us \$6.50, or an OK .14 which runs at a price tag of \$12.50 . . . a sales price of 25% to 35% above U. S. retail price is about standard and one of the principal reasons for modeling not achieving greater popularity as yet.

"We fly every Sunday when weather permits. Most local modelers are control line fans because of the many thermals and low hanging clouds. Our Zonian neighbors are sitting pretty. They can get supplies by Parcel Post without having to pay ridiculous import duties; there are several honest to goodness hobby shops in Armed Forces PX stores; and the amount of suitable flying areas in the Zone is unbelievable. We have no access to PX stores and it is a long way to the Canal Zone. —THE DOPESTER

WESTERN ROUND-UP

■ We took in one of the Larks' monthly contests and the R/C crowd made another devotee. We now have a ship ready for flight, a trainer—one which we hope will stay together long enough to teach us how to fly. So many guys advocated motor control as a safety factor that this added equipment was put in, since all West Coast contests allow it—so we will have rudder and motor control.

The Larks put on a real good meet, run exactly the same as the Nats. Each contestant is allowed 3 minutes to get in the air, then 10 minutes of flight time. This timing is monitored very closely and pity the poor guy who runs over—he is canceled out to the second. To fly, all one has to do is sign up, it is then his responsibility to be ready when his turn comes up. You are allowed 3 minutes from the time the flight touches down—not 3 minutes from the time you get ready. Contest directors and assistants are rotated so that everyone gets in his turn of duty.

These guys make a complete day of it, arriving very early, with picnic lunches, soft drinks, plenty of fuel and props, and don't leave until the sun has set. The contest closes at 3 o'clock but the flying doesn't stop. As soon as the contest is over, the first guy to get ready yells 27 and off he goes. Of course guys like Colby Evatt, John Curry and Bill Butler usually have no strain on 6 meters, all they got to do is watch see who is flying, so you can usually see two ships in the air at the same time. In fact Bill Butler and Al Holden put on some

very spectacular flights, Al on 27, and Bill on 6 meters with his Royal Rudderbug, flying formation and almost flying combat at times; we'd sure like to see this combat R/C flying.

Simple Saran System for Fiberglass. Quite naturally we ran across some very interesting things at this contest. Most amazing was perhaps the application of Saran Wrap which Bonner and Curry use in forming fiberglass. They use it as a parting agent. First they carve a balsa block to shape, sand it smooth and add a coat of filler to close up the pores. Then they wrap the form with Saran Wrap, add the fiberglass cloth, brush on the resin, wrap the form over the fiberglass again with Saran Wrap, smoothing out the air bubbles and wrinkles with their fingers. The resin is then cured, the Saran Wrap peeled off, the product removed from the form and the inner Saran removed. The result a glass smooth finish inside and out with no filling and sanding. For formers they use fiberglass rope stranded down to size, formed right in the product.

It is very doubtful that one could possibly produce a stronger, better job any simpler way. We tried it out, and it really works; worked so good that it is also being used in our job at the Con-vaire plant. Another big factor in this fiberglass is that the edges can be trimmed very easily with scissors and a razor blade if you get it at the right stage in curing when the resin has started to set up but is still a little flexible—to the extent where it is no longer a liquid but yet not hard.

John Curry's acquisition of the "Goof" award was so good that it will have to be (Continued on page 86)

Each February the New York Society of Model Engineers holds open house at the Lackawanna Terminal, Hoboken, N. J. Club has 110 members and nearly 2 miles of O gauge track (right) on which operate up to 12 trains at one time automatically. With manual control, 30 trains can be run simultaneously. Longest train pulled by a

single locomotive totaled 104 freight cars. Douglas McBride is shown enthralled by the Lackawanna commuting cars. Below him is an O-gauge size ferry complete in every detail and the scale model docking slip to match. Twenty-eight years old, the NYSME held its 25th annual exhibition in '55.

WE'D LIKE YOU TO MEET



Carl W. Noward . . . Perennial Sec.-Treas. of the American Miniature Race Car Assoc. (probably because no one else will take the job and spend the time on it that Carl does), started model car racing in 1947, has been most successful in the Custom Sportsman category. Set World Record in this class at Anderson, Ind. Nats., and has won first at race car Nats twice in succession. Carl is a tool and die maker, builds cars for those who can't do this themselves (his specialty is

the 1234 car designed by Bill Bissman), also has quite a stock of race car parts, engines, used cars, etc. His first modeling love was model planes, and he won an Open Scale contest at Muncie, Ind. when only 15, had several other wins in Scale.



Irwin S. Polk . . . Started a model plane department in Bamberger's (large Newark, N. J. department store) in 1926, and Bamberger Aero Club short time later. Personally taught each of the more than 4,000 members to build and fly a baby R.O.G. Directed 1932 Nats when gas model first cleaned up all events. Also directed 1936-'39 Nats in Detroit, arousing Exchange Club interest. Got Plymouth Motors to furnish lunches—probably the start of Plymouth interest in model aviation. First model trade show conducted by Irv and brother Nat at the Nationals of that year. In 1935, Polk brothers went into the retail model business, later branching out into wholesale, manufacturing, export and import.



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FORMULA A . . . extra-fast-drying
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for metal to metal . . . for metal to
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"Dean" of scale modelers is Texan Tom Dean whose Aeronca cropduster won 1953 and 1955 National Championship "firsts."

alignment almost always stands out like the proverbial sore thumb. Such mistakes as ribs not fitting flush with the leading and trailing edges, rib notches too big or spars jutting out or sunken in are just a few of the slips that will show through on any wing covering.

The same holds true for fuselages and hulls except that here the trouble generally arises from having the diagonals, crossbracing, stringers or bulkheads out of line. On round or elliptical fuselage cross-sections flattening or scalloping the bulkheads between stringers will enhance the model's appearance by eliminating unsightly bumps due to covering sag which always appear when the bulkheads follow the true curved shape between stringers.

Doping framework surfaces before covering is always a good idea and in many instances almost a necessity. Take for example wing and stab structures which utilize sheeting on the leading edge areas. If the sheet balsa were not doped before covering and the wing fastened down flat in the process, the wing would be susceptible to warping and sagging between the ribs, particularly where the sheet thicknesses are $1/16"$ or less or the rib spacing is very large.

Rubber-powered model airplane fuselage frameworks also present another problem: lubricant that is thrown around constantly inside the frame and against covering material. If the inside of the framework remains unprotected, the cemented joints soon loosen and weaken the entire structure, pulling it out of alignment and shortening its career. We



apply at least one coat of dope to the inside of a rubber-powered frame. Since the two sides and the bottom get the most abuse we generally leave the top of the frame open until those three sides have been doped on the inside, and then we complete the covering and dope the whole frame.

It's amazing how long you can keep a model in good flying shape this way even through constant sport flying. We

recall one which was built in 1946 and which we lost in 1954 at a meet when the model went out of sight despite the fact that it was dethermalized. We averaged perhaps 150-200 flights a year with the model and only recovered the fuselage once. It wore out three rubber motors a year. Occasionally we would rejuvenate the covering with a coat of plasticised dope.

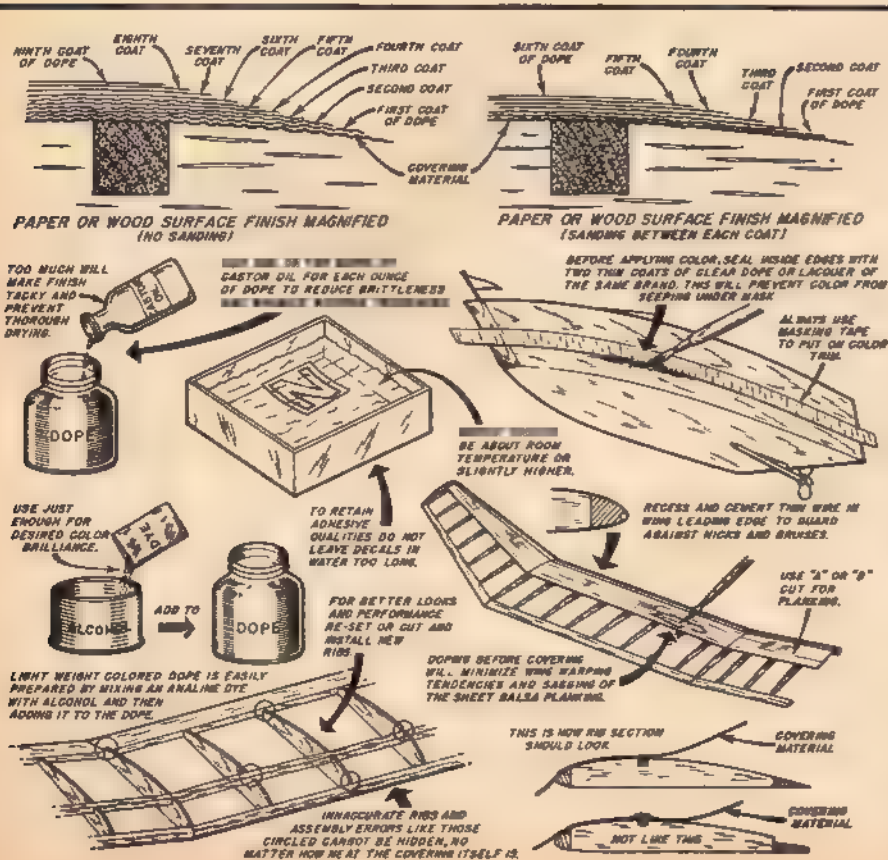
Control-line fuselages, particularly where the tank is mounted separately from the engine, almost always requires fuelproofing inside the model, otherwise any fuel which gets on the wood surface keeps soaking into the wood. This causes it to swell, loosening the joints, making the model unsightly in appearance and even unsafe to fly. About the only time you do not have to fuel proof the inside of the fuselage is when the engine and tank are one unit mounted externally and the fuselage is completely sealed off from the fuel and exhaust waste.

Surface warping is a problem that arises when lightweight frame structures are a necessity. Here is where an ounce of prevention will do a lot to minimize or virtually eliminate the tendencies to warp.

Wings and stabs are the biggest headaches; much of the time the difficulty can be traced to poor structural design. Resistance to warping can best be attained not so much through bulk but by utilizing the structural members in a semi-rigid relationship, where one member helps to keep another member in line.

Everything we say about airplanes pretty much applies to model boats, too. Your one great advantage with water craft, however, is that weight is not a factor in most cases. Thus, you can build up a more substantial framework which takes a better finish.

It could be said that short cuts to a good finishing job on a model just do not exist; to cover up some of the mistakes is only inviting trouble later on. Remember, you get what you pay for, and if you pay the price, in time and effort you will be well rewarded with the type of finish that stands out in any contest.





Everybody seems to be breaking the 150 mph barrier these days! Cheers for those Ohio Circuit leaders who plug the novice

■ Pride of the Continent is Arne Zetterstrom's Custom Proto record holder (above). Built by the talented Swedish lad, it is equipped with home-made gears. This established 135 mph mark.

Wonder how many times a model car man has arrived at the cable track just itching to make a run with a new car, or one on which he had made some changes, and found no one else there to "whip" the cable and help him get going. This happened several times to Carl Dunlavy (610 E. Grand Blvd., Corona, Calif.) and he got tired of it, so dreamed up and made the gadget shown below. It is simply a spring-loaded bridle, arranged so that when the car is set on the track or is moving slowly the rear leg of the bridle—which has the spring gadget in it—will be shorter than the front leg. This forces the car to point outward on the track, thus keeping the cable taut. As soon as the car speeds up, the increased pull on the bridle lengthens the rear leg to the predetermined position (depending upon how the music wire stops are bent) and the car then follows a true course around the track.

Carl says this gadget has worked out fine, and has allowed him to make "solo" runs many times, when he would not

have been able to do so otherwise.

Records just keep falling out in Indiana and Illinois and Pennsylvania! The record made in 1954 (151.77 in Custom Proto) by Walter Wilson Jr. had stood for about a year, but it was again reached at the Model Car Nationals at Anderson, Ind., when Howard Fox tied the speed during a qualifying round. This remained the highest speed made at the Nationals, but Fox couldn't attain it again, and came out with second in the final race. Then at Belleville, Ill., Carl Franz toppled the year-old mark; his first time was a tie of 151.77, which he followed with a record-smashing 152.04, and topped this with 152.80 mph! But even this torrid time was not due to stand for long. At the Annual East-West Meet at Bethlehem, Pa., veteran racer Howard Fox set his finely tuned 1234 Custom Proto car on the track, and soon had the record himself, with 153.08. His terrific dash came in the first heat; all the contestants waited with bated breath for the second, for it was obvious that Howard's car was really hot. But he waited just a moment too long to call time, and the speed came out at 152.28.

At the same races, another record topped; young Paul Bond of Allentown, Pa

made a great record run of 131 mph in Manufactured Proto, breaking a two-year-old mark held by Franny Wolfe of Reading, Pa.

A complete coverage of the Nationals will be featured in the 1956 Air Trails Model Annual, but a few highlights may be of interest here. First, due to a very alert Safety Committee, there were no accidents whatever this year. The Committee made up new cables every day, and their precautions paid off. Held the week of Aug. 11, very fine weather rendered this the best and fastest Nationals yet. There was a discussion following suggestions by Glenn Fairabend that a new class be set up for racing cars with motors for which parts can be had, and it was felt by those present that this would help to keep the sport growing. It is probable that such a new class will be announced soon and we'll keep you advised on it. Class A was included in the Nationals as it has been very popular in the Ohio Circuit; Class B was run for the same reason, and these two classes brought many entrants to the races who might not have turned out otherwise. Both were run under the rules that prevail in Ohio Circuit—not A.M.R.C.A. rules. Top winners in the various classes were

Custom Proto—Bob Loose (Reading, Pa.), Fox car, 151.26; **Spur Gear**—Howard Fox (Bethlehem, Pa.), Borden car, 143.08; **Custom Sportsman**—Jack Oliver (Akron), 1234 car, 138.46, Class A—Howard Rasmussen (Cleveland), Arrow car, 135.95; **Class BB**—Jack Hines (Toledo), Invader car, 116.13; **Class B**—Jerry Anderson (Kent, Ohio), Pacemaker car, 102.27. The Custom Sportsman and BB times are both new World's Records. A bid for the 1956 Nationals has already been sent in to A.M.R.C.A. by Atlanta, Ga., and we hear that another might be made by Toledo, where the city fathers have promised to back the racing fraternity in putting in a top grade track, to replace the old well-patched circle.

Midwest Regionals at Akron brought a good turnout, but races had to be called on account of rain. Results of first heats:

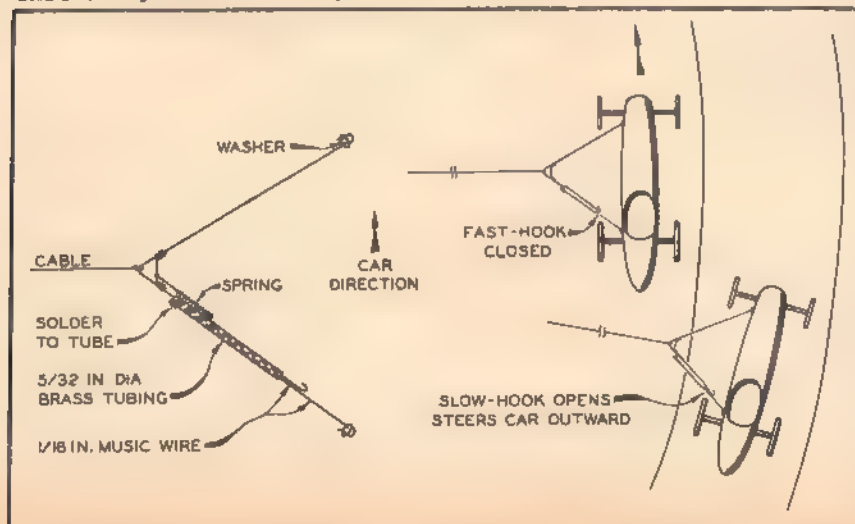
Custom—M. Knell (Urbana, Ill.), 1234, 142.85; **Custom Sportsman**—E. Oliver (Akron), 1234, 128.57; **Class B**—H. Rasmussen (Cleveland), Arrow, 128.02; **Class BB**—L. Lehnner (Youngstown, O.), P3, 109.48; **Class B**—R. Selgmyer (Cleveland), Invader, 94.43.

Southern Regionals went to Jas. Ducote of New Orleans, who topped the Custom Proto class with 134.32. The BB Class ("Clunker" Class according to the data we got!) was won by Bill Williams (Atlanta, Ga.) with 102.73.

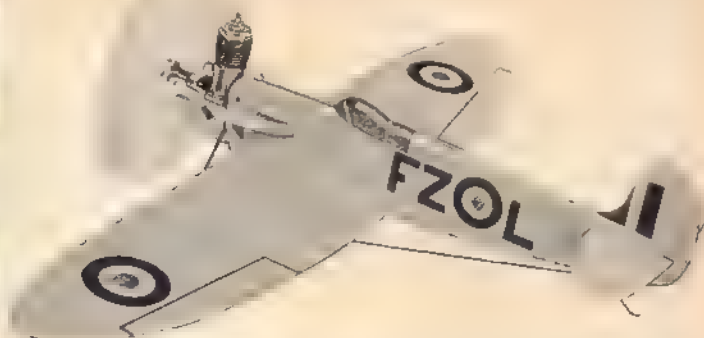
There were other winners at Belleville, Ill., of course, besides Carl Franz, whose record run we have already mentioned. Incidentally, after his record 152.80 mph run, the car and engine were impounded and carefully checked (this is quite often done, much as an insurance-against-rumors for the owner himself) and was found to be well within limits. Others tried for record speeds after the regular race was over, but most of them didn't do as well as they had in the main event. Walter Wilson Jr. was second in Custom Proto, while Walter Wilson Sr. came in third.

Bethlehem races had another father and son duo in second and third places in Custom Proto, following Howard Fox and his record-breaking 153.06; Joe Kantrow, Jr. came next with 150.75, followed by Senior with 149.25. **Manufactured Proto**—1) Franny Wolfe, 130.62; 2) Paul Bond, 128.75; 3) Joe Sampias, 128.20. **Spur Gear**—1) Howard Fox, 142.85; 2) Al Winter, 139.75; 3) Jimmy Petrakis, 131.96. Petrakis used up two pistons trying for a top place in Custom (Continued on page 76)

Bridle arrangement for 1-man operation on regular track.



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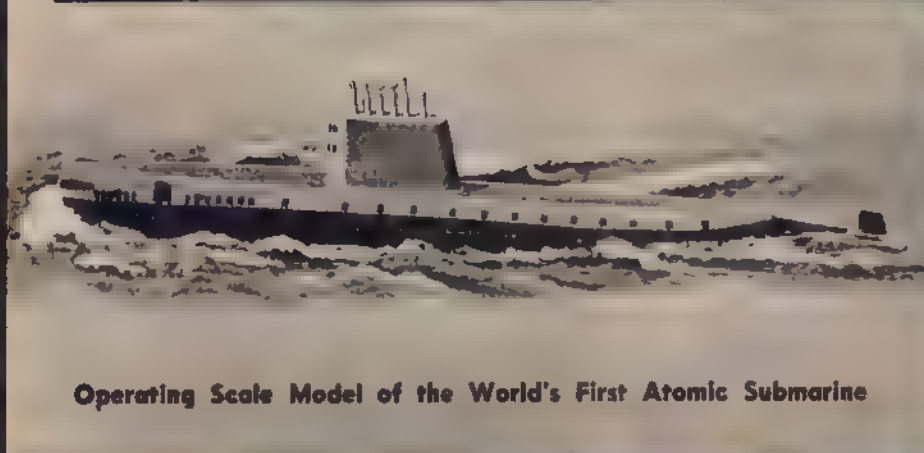
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All prefabbed, carved balsa fuselage model. It's scaled after the world famous "Cub."



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The stunt-master 1/2A stunt plane ever . . . all prefabbed with a carved fuselage, etc.



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SPAN 16" For .020 to .074 Eng.
Betty Skelton's (Pitts Special) championship stunt flyer. Highly colorful, all prefab model.



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Scale model of first U.S. supersonic jet fighter. A terrific flyer. All prefabbed kit.



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LENGTH: 20" BEAM: 8"
Sleek new speedboat for OUTBOARD engines. Prefabbed, w/ genuine mahogany veneer hull.



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"1/2A" Eng., CO₂ or Elec. Motors
Has a 12" carved balsa hull, brass metal fittings, etc. Aeronautical design.



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For "1/2A" Eng. or Electric Motors
Authentic Chris-Craft replica with 12" carved balsa hull & brass fittings. All parts finished.



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"1/2A" Eng., Jetex, Elec. Motors
Low cost speedboat thriller. Prefabbed, 12" carved balsa hull, brass metal fittings, etc.

Engineering Jobs in the Aviation Industry

In this concluding part author Gene Kropf explains how you should prepare for a career in the still expanding aircraft field

BASIC CHARACTERISTICS — ENGINEERING. Good engineers are INQUISITIVE . . . IMAGINATIVE . . . AND INGENUOUS . . . ARE YOU? It is only natural to ask "How" does it work . . . but an engineer must also ask "WHY" does it work. If you have to know *why* something works, then you are on your way to becoming an engineer.

You must be able to visualize what you seek to create in terms of size and form and function. You must also have the ability to deal with the symbolic working tools of your profession, whether it be percentages or equations, graphs or drawings. Do you have and do you use this quality of imagination?

"Engineer" and "ingenuity" stem from common Latin roots. Certainly, without this quality of creativeness, you will find engineering a little difficult. You should do everything possible to develop your inventiveness. To these three specific characteristics you should be able

to add the following traits: industriousness, accuracy, preciseness and the capacity to influence and get along well with other people.

ACADEMIC REQUIREMENTS—ENGINEERING. A college degree is almost mandatory if you plan to enter the aviation industry as an engineer. Progress is so rapid today that an engineer must have the type of education that will allow him to progress with latest developments in design and manufacturing.

In order to insure that you will be able to absorb the studies required at college, you should be in the top third of your high school class and have shown particular proficiency in mathematics and physical sciences. Since an engineer must also be articulate, you should be at least in the top half of your class in English.

ACADEMIC REQUIREMENTS — TECHNICIANS AND NON-ENGINEERING JOBS.

You must bear in mind that engineering is only one phase of the aircraft manufacturing process. There is a need for mechanics, technicians and technologists of all types who possess some of the interests and abilities of the engineer, but by no means all of them. Here, too, for years to come, opportunities will abound for young men who can do things with their hands and who crave the chance to share in the adventures of the air age.

But even non-engineering jobs require a proficiency in mathematics. Study all of the mathematics you can take . . . right through algebra, geometry, and trigonometry, if your high school offers it. The same holds true for science, general science, biology, physics and chemistry; these should be on your top priority list of high school subjects. Many high schools offer shop activities to the students such as automobile repair, welding, woodworking, etc. It will be extremely helpful for you to take these for engineering and especially for technician jobs.

Don't think that you should concentrate only in science, math and technical or mechanical subjects. You will need others, such as English, history, art, and languages in order to use your scientific knowledge effectively.

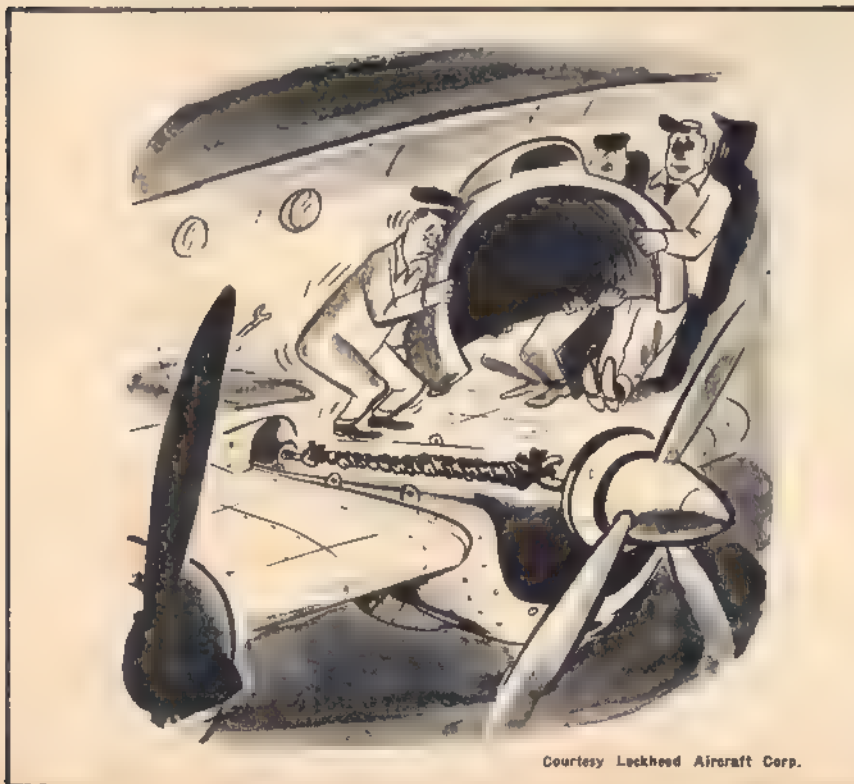
The basic engineering characteristics you possess are brought out and developed by high school and college studies. There are several things you can do outside your formal school activities to help you bring out and develop your basic engineering traits even more. These activities in many cases help you put into practice at an early age some of the knowledge you have obtained in your studies. They are as follows:

1. Discuss job opportunities in aviation with your high school guidance director.
2. Participate in educational tours and plant visits to aviation establishments as conducted by your school. Suggest tours to your student council if your school does not include them as regular school activities.
3. Arrange to take some aptitude tests to check your abilities. Some engineering schools offer this as a service to high school seniors.
4. Many engineering colleges have "high school days". Take advantage of these to acquaint yourself with college curriculum and facilities.
5. Build models. Don't be afraid to experiment with "radical designs". Don't specialize . . . ready-to-assemble models teach you adherence to details. U-control models teach you the importance of streamlining, engine operation and control sensitivity. Free-flight, rubber, gas and gliders, teach aerodynamics, stability, balance and control. Of course, radio control is ideal for learning all phases of construction and flight.
6. Join model and technical clubs. Encourage group projects in aviation and other scientific fields. Arrange for professional engineers or advanced college students to talk to your groups.
7. Read popular and semi-technical magazines in aviation. A small but extremely valuable library of publications could be built up by your club for a nominal cost per member.
8. During the summer, try to obtain a job in an office or shop requiring the use of some mechanical or technical skill. This could be as a helper at your local airport, auto repair shop, contracting or drafting office. Don't be afraid to do menial tasks in these jobs. You will learn by being with experienced men even though you may not be permitted to do the actual technical work.
9. Talk to older classmates who have gone on to college and are studying in the field of aviation.
10. Write to the admissions office of schools and colleges for information and literature. Be specific in your request for such literature. Indicate the field in which you are interested.

You can begin now to prepare for your engineering job in aviation. Fifty years ago, the Wright Brothers, through preparation and determination proved man could fly. Since that time, thousands of young men just like you have prepared themselves with the same determination to create the world's largest industry. This industry now offers you the benefits of its growth and progress. Its future development and leadership depend upon you. Will you accept the challenge?

WHERE TO

Lockheed Aircraft Corporation, Burbank, California; United States Department of Labor, Washington, D. C.; Aircraft Industries Association, Washington, D. C.; Automobile Manufacturing Association, Washington, D. C.; Institute of the Aeronautical Sciences, New York, N. Y.; Boeing Airplane Company, Seattle, Washington; North American Aviation, Los Angeles, California; Wright Air Development Center USAF, Dayton, Ohio



Courtesy Lockheed Aircraft Corp.



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Great models!
MCR for rudder control
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NOW, there are Multi-Servos especially for use with any multi-channel radio equipment! Under development for over 2 years they bring you the finest control action possible for any sort of model! Powered by a powerful 3 volt electric motor working through fine Nylon gears they move swiftly and instantly with extreme power. These servos have high pressure trouble free wiping contacts and an action which can not be jammed by reverse air loads. Really fine, deluxe actuators for your multi-channel R/C model! Note: Model MC Multi-Servos require two relays for each servo

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Fly safer and easier with MULTI-SERVOS MOTOR DRIVEN R/C ACTUATORS POWERFUL-DEPENDABLE!

FOR BEGINNER OR EXPERT!

Using your simple single channel radio without changes you can have your choice of single or multiple controls, selective to your command. Install one in your model now and use less batteries at a lighter weight! There are no linkages or rubber band problems, those worries are gone forever with Yelb. torque, motor driven 'Multi-Servos'!

4 GREAT MODELS, ONE FOR EVERY R/C NEED!

MODEL 2PN . . . \$11.95

Two positions with an automatic neutral, for single control operation.

MODEL 3PN . . . \$14.95

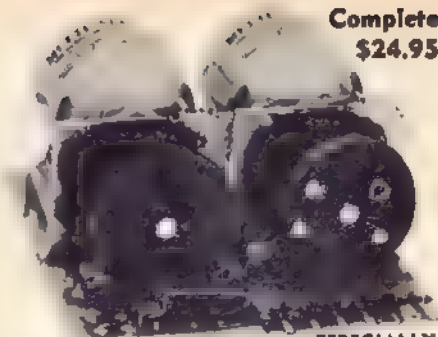
Two positions with an automatic neutral, plus a 2nd actuator circuit added.

MODEL 2P2N . . . \$11.95

Two positions with two neutrals, use separately or with 2PN for second control.

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Three positions without an automatic neutral, for auxiliary controls.



Complete
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A complete actuator unit that provides selective steering, forward speed, reverse speed, and power shut off for electric motor powered vehicles. Only a simple single channel radio is required for operation.

Check these features!

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- Specifications -

Models MCR and MCE
Width: 1½" Length: 2½"
Height: 1¼" Weight: 2 oz.

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R/C SCALE!

Patterned after the ever popular "Aeronca Champion", designed to give the best in R/C performance, here is the model you have wanted! With full scale appearance it's simple to build and easy to fly just as a R/C model should be! Fly it "rudder only" or use elevators and engine control too, complete information is given!

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Williamsville, N. Y.



SENSATIONAL KIT!

Wing span: 56"
Wing area: 600 sq. in.
Weight: 3 to 5 lbs.
Power: .15 to .19 engines

- Removable R/C unit for ease of service
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THE WORLD'S MOST POPULAR
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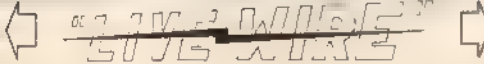
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NEW REALISTIC
Complete Kit \$14.95

Cruiser



The name that signifies the PROVEN BEST for all R/C flying.
Only with Live Wire Models do you get all these superior design features!

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The force arrangement is such that it provides exceptional wind penetration without excessive power. Climb is controlled under all flight conditions and speeds.

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All design factors are aimed to provide exceptional stability and immediate recovery from abnormal positions without sacrificing maneuverability.

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The Live Wire is instantaneously maneuverable and responds to any rudder action whether in the glide or under power assuring fine precision flight.

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The extensive use of pre-striated sheet balsa makes for a simple to assemble model with extreme strength which gives many trouble free flights.

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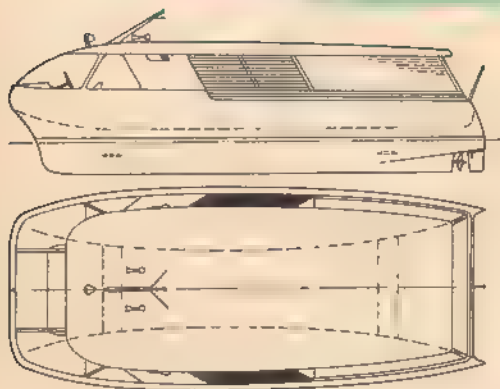
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NEW YORK, USA

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\$50
AWARD



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SECOND
\$25
AWARD



Swamp Scooter by Alan Hall of Warrensburg, N. Y. Powered by a 25 hp surplus target drone engine driving a 3 ft. propeller, it is capable of negotiating marshland and serving as a water motorcycle. Framework is of welded seamless tubing, pontoons are of plywood covered with fiberglass cloth for added strength.

The Sea Cat, an unlimited class racing craft by E. L. Faciane of Dallas, Tex. Features dual pontoon hull. Is powered by one 4600 lb. thrust jet engine. Suitable for straight-line speed attempts. Spoiler under cross-structure reduces lift. Top speed 200 mph plus.

THIRD
\$10
AWARD



Rules governing this design competition are as follows: Profile (side), plan (deck) and (cross) sectional views of the proposed craft will be required, plus any detail sketches necessary to illustrate unusual features. Do not handicap yourself by submitting hull drawings less than 6 inches in overall length. Give sketches of craft from three-quarter front and rear positions. Photos of a model of the proposed design may be included. Information of powerplant(s), estimated performance, dimensions and explanations of

special features are required. Data as to age, occupation or schooling of the entrant should accompany each submission. Mail entries to Boat Design Competition, YOUNG MEN, 304 E. 45th St., New York 17, N. Y. Entry each month judged most practical or of greatest significance will receive \$50; \$25 will go to second place and \$10 for third. The editors regret they cannot enter into any correspondence or undertake to return any of the submissions, due to the large number received.

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Ready for inboard motor
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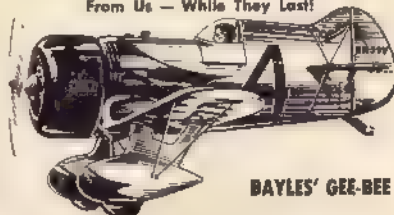
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Everything Under Control?

(Continued from page 7)

wait over 3 hours between flights on Saturday! This time was cut down to about 2 hours the next two days, by strict adherence to the very practical field rules that had been set up, but it indicates the amount of flying

The 50 mc. gang set their transmitters on two different frequencies, so they could always have two ships up at once. The one or two 465 mc. operators present practically flew themselves to exhaustion (why don't more modelers use this frequency and get out of the 27 1/4 mc. jam?!!), while one ham operator had his equipment on the 21 mc. band. A regular flight line was set up on 27 1/4 with a "monitor" to keep track of things, and to urge slow movers to greater action over the P.A. system. On Saturday the Flying Circuits acted as monitors, while members of the DC/RC gang took over this chore on Sunday. A new wrinkle this year was that the Meeting was AMA-sanctioned, and Dr. Walt Good acted as Contest Director.

Some remarkable flying was seen, as it should be, considering that some of the hottest flyers in the northeastern area were in attendance. There were four planes flying with versions of Dr. Good's simultaneous dual proportional system, two on 50 mc. and two on 27 1/4. Several impromptu "pylon" races were staged by Dr. Good and Harold deBolt; Walt's 8-year-old Rudder Bug was not too fast but he can make those pylon turns so sharp the Goodyear racers would turn green with envy. Feature of the flying was a chance to see the big R/C biplane that Ernie Kratzet operates. Ernie uses

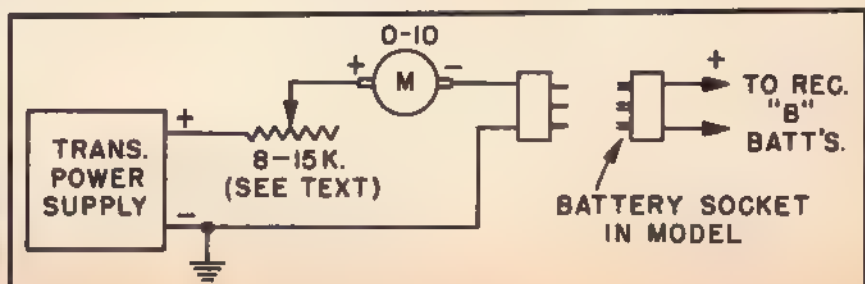
R/C diesel yacht "Chinook" by M. Lavie of Bordeaux, France, is 56" long, has twin screws, working windlass. Each life boat can run by itself. Small photo shows details near the galley.

27 1/4 mc., but we noticed that every time he put the biplane up all operation on other frequencies was suspended, while the boys watched the fun; the big green ship is most impressive. Ernie normally ROG's it, but since there is no paved runway at Selinsgrove, he had to hand-launch. It takes a man to do this (the plane has been clocked in level flight at 39 mph and weighs 13 lbs.) but it got away nicely each time.

There were lots of other highlights—Lou Errington's and Warren Hall's Cruisers traveling leisurely back and forth over the field upside down, a couple of very nice scale Cessna's often in the air, a couple of glider-like planes with engines on pylons over the wings, and some real frantic stunting by single and multi-control ships alike. Invitations to the 1956 Meeting will be sent only to top flyers in the area; practice up, men!

New England R/C Championships were held at Beverly, Mass., sponsored by the New England R/C Modelers. Hurricane Connie kicked up some 20 mph winds, but even so, 25 contestants flew—another 25 kept their planes safely tucked away in cars! Bill Veltette came off top man, winning the AMA Pattern event and the Spot Landing event, also taking second in the One Mile Race and third in Beauty. He thus had points enough to nose out Dick Ryan for the John K. Ross Perpetual Trophy. Winners were

Drawing 2: transmitter power supply used by Purdy to charge "B's" in field.



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Edward L. Friend, Las Cruces, N. M., his Babcock equipped plane and Championship Trophy.



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PACIFIC N.W. REGIONAL M.A. MEET—
Babcock radio control captured both single and multi-channel flying events.

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at Riverside, Calif., saw Babcock multi-channel win both 1st and 2nd awards in the precision event.

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HATS OFF TO EDDIE FRIEND and his brilliant precision flying that won him top honor award in the National Championships single channel radio control event.

"IT'S EASY WITH BABCOCK!" said Eddie. "I built my first R/C model less than a year ago and I have had nothing but successful flights since installing the Babcock equipment. Its simplicity and extra reliability gave me the confidence and ability to win at the Nationals!"

BEAR IN MIND, this was Eddie's 1st major contest and his 1st radio controlled model plane built a few months before the event. Actually, Eddie was still a novice, an unknown youth pitting his skill against experienced contest flyers.

THE ANSWER, of course, was Babcock equipment. *There* was his confidence! His only concern was the flight pattern. He knew his radio and its reliability. *That made the difference!*

REMEMBER—For model use, you get the same custom quality components used in the famous Babcock military radio control. Every part is guaranteed to provide trouble-free performance, easy operation and unmatched reliability in all environments.

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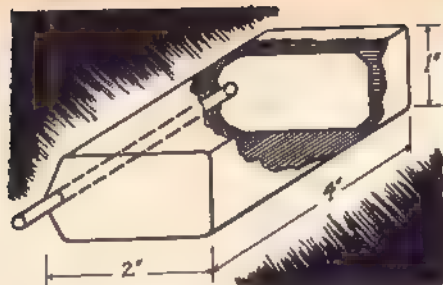
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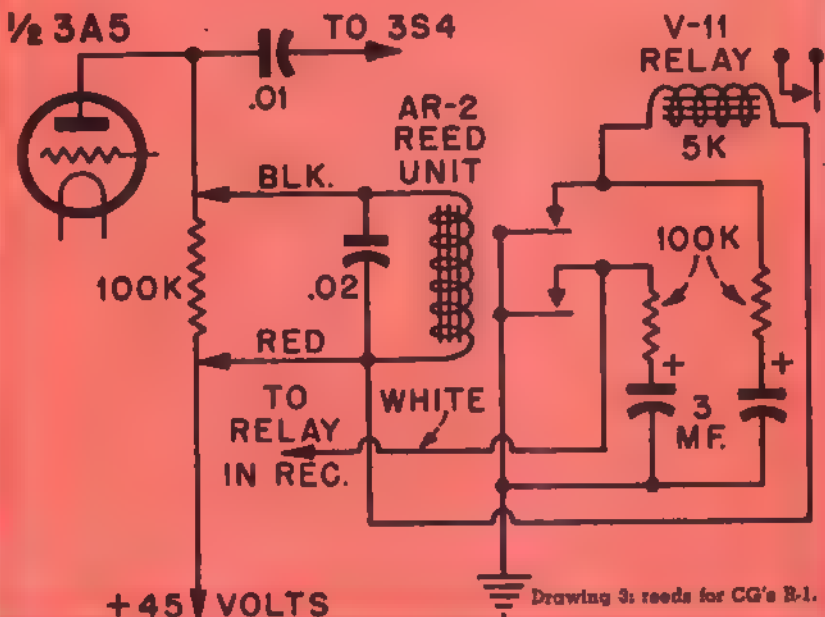
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C.G. MODEL RK-2 TWO CHANNEL CONVERSION UNIT



Everything Under Control?

AMA Pattern—1) Vellette, 46 points; 2) R. Ryan, 41; 3) B. Collins, 29. One Mile Race—1) Ryan, 12 mph (not bad considering the wind); 2) Vellette, 3) D. Ferguson. Novelty—1) L. Wilson (dropped a huge parachute); 2) R. Ryan; 3) J. K. Ross; last two dropped parachutes and gliders via dethermalizer fuse. Spot Landing—1) Vellette; 2) J. K. Ross; these two were the only ones able to get upwind to shoot for the spot! Beauty—1) D. Ferguson; 2) A. Cote; 3) W. Vellette. Dubious honor of gaining the "Best Crash Award" went to Bernie Collins—his wing folded during the AMA Pattern. CD was John K. Ross, and anyone wishing to contact the N.E. R/C Modelers should write to 23 Lantern Lane, Wellesley Hills, Mass.

2nd Annual Contest of Lakeland R/Cers was held at Waukesha, Wis. High winds bothered this one too, but over 30 contestants flew in the meet. In addition to the two AMA classes, this meet had an extra class for "Multi control on a single channel," meaning all the controls you could work over a single CW or tone channel. There weren't many entries, but enough interest was shown to assure inclusion of this class in the 1956 meet. Winners were: Rudder

Only—Dick Adams; Single Channel—Glen Lee; Multi Channel—Frank Madl. Besides a large contest prize list there were over 30 door prizes; top prize in latter category was a genuine wooden door, which winner Dick Adams carted home.

Comments continue to roll in on the R/C event at the 1955 Nats, and most all our correspondents feel R/C Director Howard Bonner and his assistant Camby Wilson did a fine job. One entrant, though, wondered at the wisdom of operating just a single flight line, with all frequencies flying therefrom; this was done because there was no particular jam-up of entrants, but even so, it seems the tendency ought to be to encourage everyone possible to get off 27 1/2 and to operate on any other frequency possible.

They had a neat system for keeping the flying going right along; a clock with a large bell was on hand and as soon as one flier landed the clock was started. Three minutes later it went off—completely impersonal and most effective.

One contestant did quite a bit of inverted flying, several nice inverted turns

Badaco's 5-channel receiver is outgrowth of its 2-tube A.F. unit. The 10 1/2 oz. affair

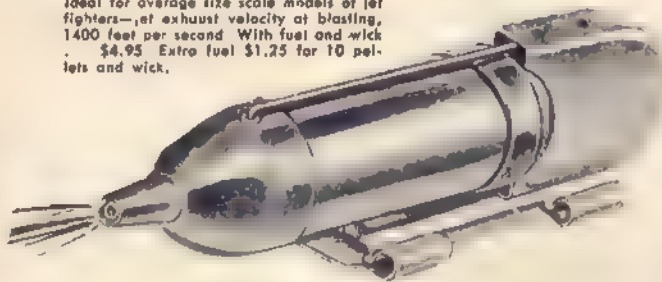
with 5 Neomac relays measures 3 x 3 x 2 1/2". Price, \$79.95.



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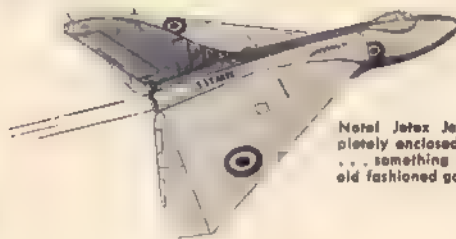
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Build these amazing engines right into true scale models . . . (kits are available). It will be invisible like an engine should, but you'll know she's there when your jet roars off at scale supersonic speeds.

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AMERICAN TELASCO, Inc. 164 Spring Rd., Huntington, N. Y.

and three outside loops, all with a plane fitted with an under-cambered wing; set the symmetrical-wing boys to thinking! Opinions of the caliber of flying differ, but it seems number of reeds is going up; there were several 7-reed outfits in use, and in general it appears that reeds stole the Multi-channel show. Consensus seems to be that the good big planes will outfly the good little ones, and Schneider's long success with his modified Cubs is given as proof.

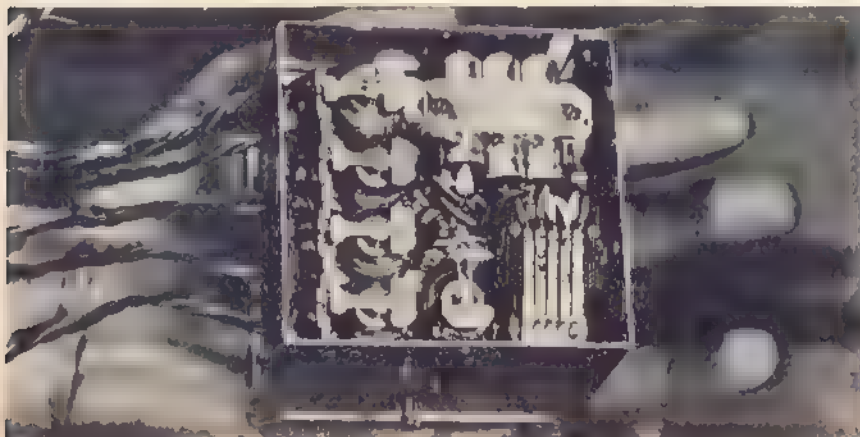
Annual election at the DC/RC ended with following officers chosen: Pres., John Hamblen; VP, Murray Colliere; Sec., Roger Lapp; Treas., Reg Mitchell. At a recent meeting of the group, Hamblen told of some tests he had made recently on the new Eveready "inside-

out" flashlight cells. These look just like regular cells, but cost a few cents more and are marked D-99. At a constant drain of 200 ma. several samples of the D 99 averaged 170 minutes before the cell voltage dropped to 1.2; checks of regular D cells showed only about a 75 minute average. When the cells were run at 200 ma. for 15 minutes on and 15 minutes off (as they might be during a busy day of flying), the D-99 units showed a total of 500 minutes before dropping to 1.2 V. It is understood that cells with this same construction in the C and penlight size may be on the market soon. Readers who wish to contact the DC/RC may write to Mr. Lapp at 9511 Ocala St., Silver Spring, Md.

R/C activity around St. Louis, Mo.,

Opened aluminum case of Badeco's five channeler shows less-than-palmy of

relays, reeds and electrolytic condensers. 3-channel receiver is coming.



is "mild and scattered," according to Jere Tyrer (5348 Devonshire, St. Louis 9). He hopes to get an R/C club going to stir things up, and would like to have anyone interested in R/C get in touch with him at above address.

Report on August R/C club contest of the Los Angeles Radio Controllers shows these results: *Multi control*—1) Dean Kenney, 120½ points; 2) Colby Evett, 100½; 3) Ted Comersky, 85½. *Single channel* (this club allows everything you can get on a single channel in this category)—1) Chuck Boyer, 88½; 2) Bill Williams, 50½; 3) Bill Butler (who sent us this data), 45½. Group apparently does not fly the AMA Rudder-only category, which seems to leave the real beginners out of the fun—and those were the fellows for which the Rudder class was set up! As Butler points out, Jim Walker's multi-channel "Pozzipo" setup would qualify in the LARKS Single Channel event. So would Charlie Siegfried's "flying telephone exchange"; so would Walt Good's dual simultaneous proportional outfit. What chance would a fellow with plain rudder have against such equipment in a contest? Anyhow, LARKS' experience with this sort of split should show whether a third official AMA contest category in R/C is needed.

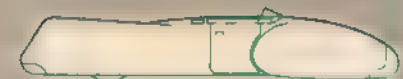
R/Cers in Miami, Fla. area are members of Tropic Aeros Radio Club (T.A.R.C. for short), which is a branch of the regular model club in Miami. Last reports state that there are 13 members and business meetings are held once a month. Every Sunday the gang gathers for a flying session, and a spot landing contest, points being awarded. At the

(Continued on page 65)

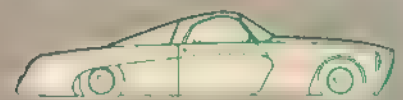
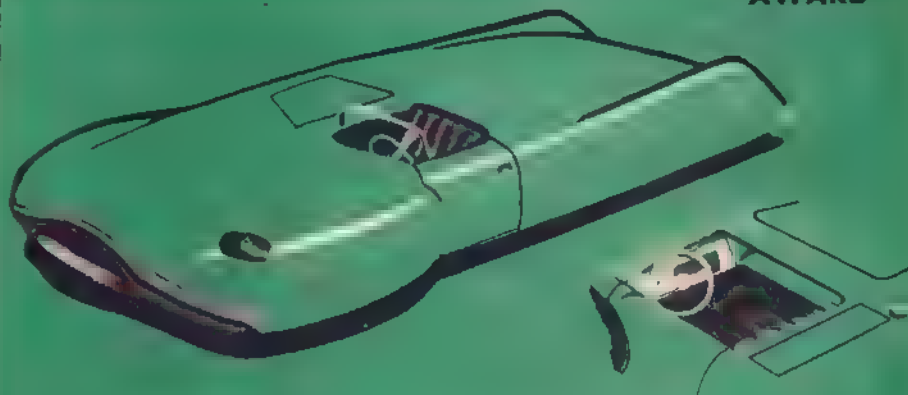
AUTO DESIGN COMPETITION

FIRST

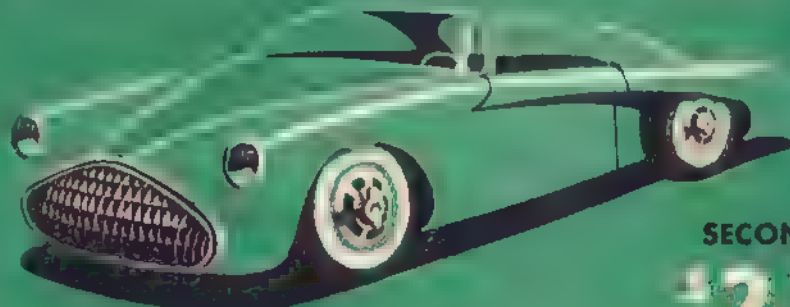
\$50 AWARD



Record-sports car by Sigitas Sorkanas of Weathersfield, Conn. As single-seater, with passenger compartment covered over by metal plate and windshield retracted, can be used for competition work. Other features include light aluminum body so designed that air exerts downward pressure on front part for better steering control at high speed. Fender-body section flows in with bumpers. Single anamorphic lens headlight.



Turbo-car by Douglas Cowen of Fulton, Mass. Powered by gas-turbine engine rated at 320 hp. Chassis is of welded steel tubing; body, aluminum. Wheel base 105 in. Air for turbine is taken in through the grilled aperture in front. Gases are exhausted through dual pipes below tail lights. Expected performance is 160 mph top speed, acceleration from 0 to 60 mph in 6 seconds.



SECOND

\$25 AWARD



Tricycle racing car by Carl Forsberg of Farmingdale, N. Y. Car is designed on basis of equilateral triangle wheel base to give good handling and cornering characteristics at high speed. Powered by a 80 hp horizontally opposed air-cooled engine located on right side next to driver for balance reasons, and driving the rear wheel through a shaft. Transmission has four speeds forward and one reverse. Frame is built of seamless tubing, welded in Warren truss. Body is fiberglass.



THIRD

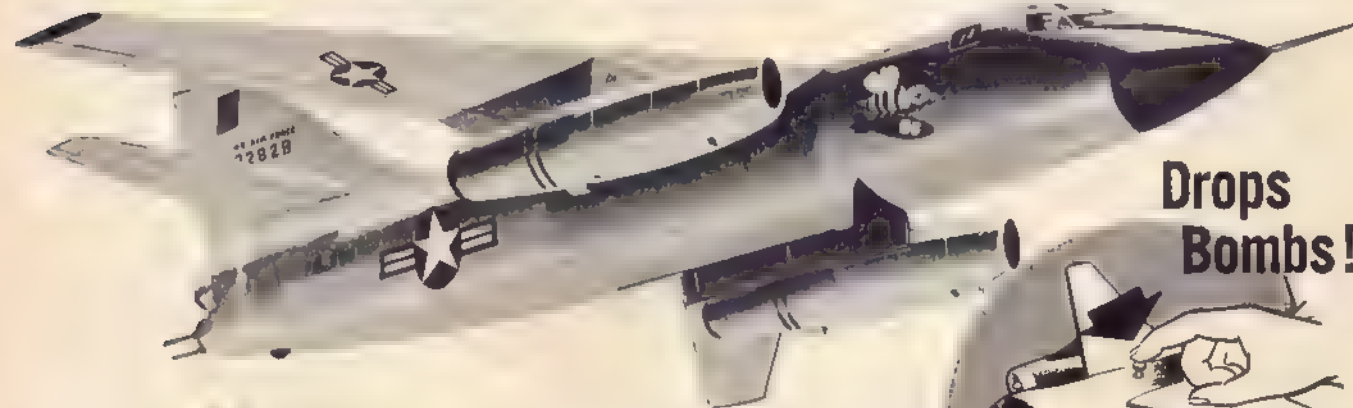
\$10 AWARD

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Cash awards will be made each issue for the three most significant auto designs submitted to this magazine. \$50 will go to the top design, \$25 to the second and \$10 to the third. You may submit sketches for an original design auto, for a restyled car, for sportscar, family sedans, record cars, hot rods, military vehicles or unusual trucks. Include side, front, rear and top drawings, plus sketches of the proposed vehicle from three-quarter front and three-quarter rear positions. Sorry, we cannot enter into any correspondence about this contest. Send entries to Auto Design, c/o YOUNG MEN, 304 E. 45th St., New York 17, N. Y.

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HOBBY HELPERS

770 HUNTS POINT AVENUE

NEW YORK 59, N. Y.

Bonneville

(Continued from page 37)

Operation of the Car: Select a smooth surface for running the car, preferably a tarred or cement paved surface. Measure out about a 20 ft. radius of .015" wire and fasten to the .062" wire bridle.

Starting the engine is quite simple, but getting the car to run requires this procedure: Get the engine running at its peak and then richen the mixture about a quarter of a turn. Hold car against the ground with only the front wheel touching. Then with a quick shove and follow-through sweep the drive wheel onto the ground with as little bounce as possible to minimize the tendency of the engine to stall out when the wheel comes suddenly in contact with the ground.

After much experimenting with different wheels we got so we could get the car off cleanly about 50% of the time, which is a pretty good average. If you should install a diesel engine your average of good starts will probably be higher, and with the electric motor installed there is the advantage of starting all the time.

Bill of Materials

(Balsa unless otherwise specified)

(1) 3/4" x 3" x 12", fin. (3) 3/8" x 3" x 36", car sides and bottom. (2) 1/2" x 3" x 36", car top and bottom rear (1) 1" x 1 1/2" x 24", stabilizing wheel fairing and cockpit.

1/16" plywood for firewall; 3/32" dia. wire for axles; two 2" dia. hard rubber streamlined wheels; 1 1/2" dia. hard rubber wheels; 2 1/2" dia. hard rubber wheel with large metal hub; 3/4" dia. fiberglass tubing; retaining washers; neoprene tubing; fuel proof dope and cement; .035 to .09 engine or electric motor with intermediate batteries.

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"Now you have done a still better job—made it much more complete—and I just used all of the complimentary things that I would enjoy saying, in last year's letter. But more seriously, I want to congratulate you again on the excellent and complete coverage you have given the model railroad hobby. I firmly believe that catalogs such as yours can do more to stimulate interest in

model railroading than almost any other form of publicity. It must be a satisfaction to your customers to receive a catalog in which they can find every last item that they could possibly need to build or improve their layout; and further, I am sure that they find a great many things they never realized were on the market. You can take great pride in a job well done, and I am sure every manufacturer will appreciate your efforts in furthering the hobby.

"Again, congratulations on a fine piece of work in your latest catalog. You always do

a wonderful job, but this is GREAT. We wish that we had many more dealers like you but know that YOU will not agree with us on that. Best Wishes."

JOHN TYLER

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Under Control

(Continued from page 61)

end of each 4-month period, high-point man gets a trophy. Our informant, Bob Quick (1896 N.W. 36th St., Miami, Fla.) says their field is a weed patch, so no ROG's can be made. Bob says everyone there flies proportional, since there is almost always a heavy wind—average breeze is 12-15 mph, and they sometimes fly in 25 mph. For same reason, planes are overpowered by most standards. R/C boat activity is moderate; several builders are awaiting K&B-Allyn Twin outboards, for some fast jobs. Bob says that Tampa and St. Petersburg are hot boat centers.

Anyone have an extra coil for a Ra-Con reed bank? Bill Woodall writes from Thomaston, Ga. that his has gone bad and he can't locate another anywhere. Bill will be happy to purchase a coil only, or a whole reed unit, if he can get one.

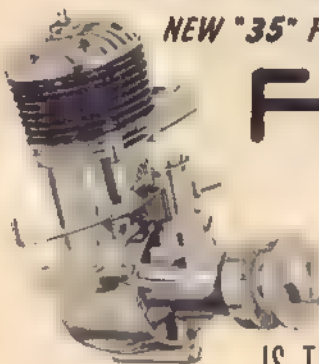
Now is the time, it appears, when we should start writing to our Congressmen about more frequencies for R/C work. It won't take too many calls from said Congressmen to the F.C.C. before the latter would have to acknowledge maybe that something ought to be done in this line. While it seems the radio spectrum is already full, there are still some possibilities for R/C expansion. For one thing, they could give us the entire 27 mc. "band," which extends from 26.960 to 27.280 mc. Then, there is a band at 13.553-13.566 mc. and another at 40.66-40.0 mc. All these are so-called "indus-

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trial-diathermy" frequencies, and the possibility of interference exists. But it does on 27.255 mc. too, and we've done very well there. We could probably continue to do so but for the fact that the F.C.C. has been slipping communication licensees into this spot. The fact is that R/C has simply outgrown its two frequencies of 27.255 and 465 mc.; we have the numbers to put on real pressure for more space. Calling or writing to your Congressmen is the best way to apply such pressure—get to it!

And while you are doing so, put in a strong protest about those communication licensees being put on 2.255 mc.! But before you write anyone on this subject, *make sure you are legal yourself*—get that Citizen's Band license and see to it that all your R/C friends do so as well. The more licenses we get in to the F.C.C. the better the chance of obtaining more frequencies, and possibly of curtailing the issuance of communication licenses on 27 1/4. If you belong to an R/C club, make it a club project to write to the local Congressmen, and be sure every member signs the letter. All those signatures mean possible votes to a politician, you know!

Technical Notes. Bill Saka tells us that his switching system shown at top of page 13 in the Sept., 1955 issue was not really intended for use with two models on a single tone transmitter—that was just an afterthought. He worked it out for those who don't like to fly multi-control ships fitted with rudder and elevator, using a single control stick. By putting two switches on the control box, the rudder and elevator could be moved separately, one lever for each.

While on "boo-boo's," we note one in the circuit of the Compact-Pulser, page 36, Oct. 1955 issue. The movable arm (usually the center lug on pots) of R3 should be connected to the right hand end of R1, and there should be no connection to the lower end of R3. The action of the dual pot R3-R10 is that resistance in one section must drop as the other increases.

A transistor power supply is the goal of Gil Miles (190 Croydon Rd., Croydon, Sydney, Australia); he hopes to work up a light weight unit utilizing a transistor oscillator working from 3 V. Output would be rectified and filtered, to give 45 V. at a few ma. for the receiver high voltage supply. His latest arrangement utilizes push-pull transistors, and the output goes through a voltage doubler using tiny diodes. Gil hasn't attained his goal yet, but we look for a favorable report soon. He has been flying an R/C Delta for some time, and has a new idea for a control system; vertical control tabs will be placed on each wing, each tab pivoted about one-third from its leading edge. In straight flight, the tabs lie fore and aft, but for a turn, the tab on the side to which the turn is desired is rotated a small amount. Gil expects this will produce drag on that side, also a "spoiler" effect; system has been tried in wind tunnel and looks good. This Delta, incidentally, has a span of 5' and is about 2 1/2' fore and aft. We hope to get some photos of it for this Column.

Commercial Items. Many new R/C items available from Polk's Model Craft Hobbies (314 Fifth Ave., New York 1, N. Y.). Pocket-size R/C test meter is now being shipped; measures 4 1/2 x 3 1/2 (Continued on page 74)

ESSCO R/C PRODUCTS AVAILABLE FROM THESE AUTHORIZED DEALERS

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STEVE'S HOBBY CORNER, 596 E. 14th Street

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The Essco Cascade Quad & Jr. Quad 2nd stage circuit was developed by us to remedy the problem created by the variations found in the new long life RK-61 tubes supplied by the manufacturer. We know of no other method that can compare in performance, high sensitivity, stability and economical battery drain. Almost 1,000 sets & kits using the Essco Cascade Quad circuit have been sold by us in the last 3-4 months. Our files bulge with letters from people who are extremely happy with the superb performance and battery economy they obtain from the Quad sets. There is no better proof than this.

It is for this reason that we object to misleading advertisements by others attempting to capture some of the receiver business by stating that the use of diodes in a receiver causes a delaying action of the relay stage. This is absolutely not so and misleading. The use of high quality components and good design such as ours gives superior & reliable performance that these people cannot even approach. You therefore should not be confused & misled by the false claims of "delaying cascaded diodes." All Essco products are sold on a money back guarantee. You therefore take no chances in purchasing tried & proven ESSCO R/C Products. "FIRST IN THE FIELD."

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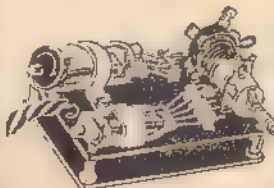
MODEL R-41TQ, complete set with SIGMA 4F RELAY 19.95

MODEL CK-TQ, a conversion kit for all model Lorenz and N.A. receivers. Complete with special new subminiature control pot 3.45

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MODEL R51B QUAD, wired & ready for use, includes choice of relays ELECTRIC, KURMAN, or ADVANCE relay 23.95

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MODEL BOATING

Mini-water skiers make 'em marvel . . . dethermalizers for boats . . . plus: straight-line steering

■ A stunt that delights the onlookers is towing tiny water skiers behind a fast model boat. This idea was dreamed up by members of the Corona Model Boat Assoc., and described for us by Carl Dunlavy (610 E. Grand Blvd., Corona, Calif.). He says they successfully pulled just one skier, then added two more. Skier is made of balsa or any other light material that will float, and must be well-waterproofed.

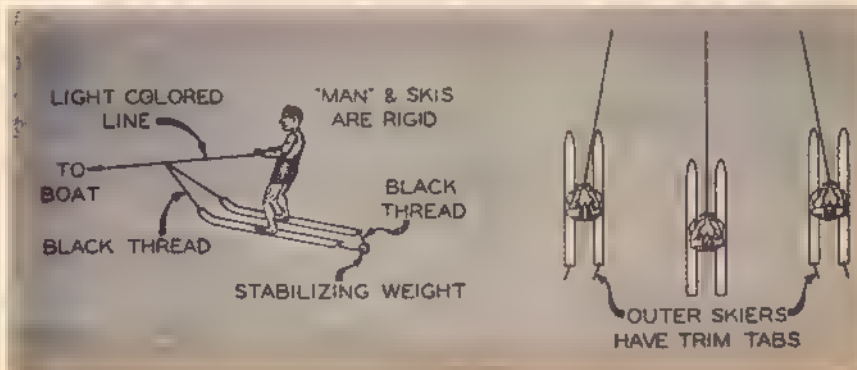
Trick in making these characters track correctly behind the boat is to have threads from the tip of each ski running up to the tow line. A light-colored line is used for towing, and these auxiliary lines are made of black thread, so they will not be conspicuous. Then, a "drag" is added to the stern of the skis; a small lead weight also on dark thread does the job. For the trio of skiers, rudder taps are placed on the outer skiers' "boards," so that they tend to steer away from the center man. Carl didn't say just how they got such a trio underway; possibly the skiers are weighted so they will float upright in the water—maybe up to their waists.

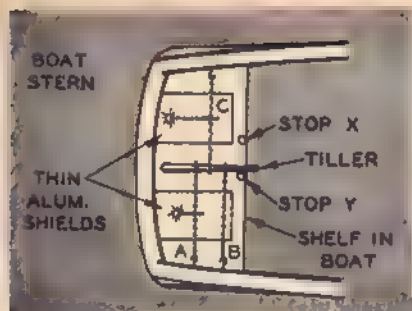
A scheme to prevent a boat from stopping in the center of the lake comes from Henry Taylor (209 Oakdale Rd., Baltimore 10, Md.), and is a simple application of rubber bands and dethermalizer fuse. As we show it the rudder is held in center position against stop Y

by rubber band A. Bands A and B together have the same pull as band C has alone. Thus, when you set the craft off after lighting the fuses, the three bands balance each other and neutralize the rudder. When the fuse on band A breaks, the rudder is pulled over to stop X and the boat goes into a turn. By proper timing of fuses, band C can be made to break after the craft has completed a 180 degree turn, whereupon band B takes over, and brings the rudder back to center again, and the boat (says Henry) returns to shore. Small shields of thin aluminum under the fuses prevent damage to the finish of the boat. Looks like a much simpler and lighter way of steering the ship than using clockwork timers and the like

We want you to meet Charles Watkins who's pictured holding his World's Record Class B speedboat. A member of the Chicago Model Power Boat Assoc., Mr. Watkins built the boat, and also the 30 c.c. engine, latter being made from a set of Octura castings. The boat set a record speed of 81.81 mph, and is seen stepping along at top speed in the lower shot. Note that it rides on three "points"—the two sponson tips and the propeller; this is known as "surface propping." Battery and spark coil ignition are used. Pix from John R. Matthews (10451 S. Parnell Ave., Chicago 28, Ill.), Vice-Commodore of the C.M.P.B.A.

Good for a grin any time are the Corona model skiers.



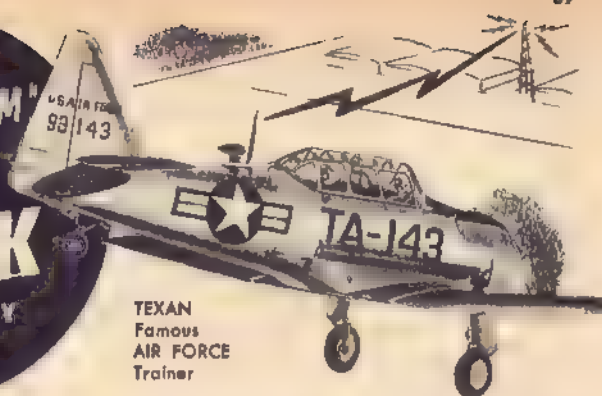


Taylor uses boat dethermalizer.

In an effort to make a boat travel a perfectly straight line to any desired point, Joe Archer (3314 Center St., Orlando, Fla.) installed the device shown on page 71. The boat was an air-drive job propelled by the engine from an Allyn outboard; engine head was removed and a backplate fitted, so it could be mounted up on a pylon with an air prop. The boat itself was something like "Obes," had sides and transom $\frac{1}{4}$ " thick. We say "was," since the boat met a sad fate. Wind turned it over in deep water, and it sank before Joe could get to it.

Anyway, he says the steering device was a real success; it is seen to consist of a pivoted arm weighted on the stern end. The arm is fitted with contacts arranged so that the steering motor will turn the rudder to right or left, according to the way the arm moves. With proper connections, this setup will correct for turns in either direction, according to Joe. The arm might need a light spring on it so that it would normally rest in center position, with no contacts closed. This device was fitted to a rather fast boat, and we assume that it was centrifugal force which moved the weight and arm, not the normal rocking of the boat; otherwise it would go crazy in the waves! Joe's sketches

Meet record-setting Mr. Watkins. mates.

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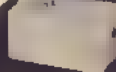
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**27
MONTHS**



MODEL BOATING

showed the switch located right in the bow of his craft.

Eastern Circuit clubs of the I.M.P.B.A. held a two-day meet at Patterson Park in Baltimore; Baltimore Club was the host (they had the most work to do!).

Results of the first day were as follows:

Class A (over 30 cc.)—1) Max Biederman (New York), 66.17 mph; 2) Ben Kaufman (Phila.); 3) Andy Bailing (Balto.), with his flash steamer. Class B (30 cc.)—only entry was Max Biederman, who made 72 mph. Class C (15 cc.)—1) Bob Graham (New York) 71.14; 2) Bob Deroo (Phila.). Class D (10 cc.)—1) Max Biederman, 77.92; 2) Ray Seavey (Phila.); 3) Bob Graham. Class E (stock 10 cc.)—Bob Deroo won with 62.50 mph; Bob Graham hit 76.92 for one heat, but Deroo was winner since he finished all three heats. In third place came Ralph Richards (Phila.). Class F (5 cc.)—1) Billy Baxmann (Detroit), 59.21; 2) Ricky Baxmann (Detroit).

Winners on second day were:

Class A—1) Max Biederman, 62.50 mph; 2) Ben Kaufman, 53.89; 3) Joe Sparr (Balto.), 37.11. Class B—1) Max Biederman, 70.38; Class C—Bob Graham, 72.00. Class D—1) Max Biederman, 77.92; 2) Chas. Baxmann (Detroit), 75.00; 3) Ray Seavey, 72.00. Class E—Bob Graham. Class F—1) Larry Richards (New York) 58.06, 2) Ricky Baxmann, 50.70; 3) Billy Baxmann, 50.27. Larry Richards won the Speed Handicap Race. There were merchandise awards from many model industry firms, and trophies were supplied by the Eastern Circuit clubs. A record trial run by Bob Graham resulted in a speed of 80 mph for his Class F boat.

At the two day Toronto Races Max Biederman broke his own Class A record, also winning Class B, and he took Class D with 83 mph. Bob Graham (who sent us these results and also those of the Eastern Circuit races) took Class C with 72 mph and Class E with 78. Class F was taken by Charles Baxmann's son, who topped his dad's former speed to set a new World's Record in this class. Biederman won the High Point award for the two days of racing, and Graham copped the Nomination Award. We expect to have more complete results of this race and the new Class F record next issue.

More Speed results come from Peter Yanczer (8737 Nashville Rd., Richmond Heights 17, Mo.), Commodore of the St. Louis Model Boat Assoc. At their two-

day regatta, winners were for first day:

Class B—P. F. Yanczer, own make engine, 45 mph; Class D—W. R. Kleypas, Hornet, 65.69; Class E—P. F. Yanczer, McCoy, 81.08; Class G—W. Pugh, Wen-Mac, 23.43. Free-for All race was taken by Bill Fink with an Atwood outboard, and J. Garamella had the dubious honor of Lowest Speed with his Hornet-powered boat, streaking around at 23.19. Second day results were: Class B—W. R. Kleypas, own engine, 38.08; Class D—J. Garamella, Hornet, 14.06 (again the low speed of the day). Class F—P. F. Yanczer, Hornet, 79.64. Five members of the Indianapolis club attended the regatta for a day, and were most welcome. Pete says that results were generally poor on both days, for a variety of reasons—broken crankshafts and cases, defective fuel tanks, etc. Weather was fine and the water smooth. Everyone had a good time, though, and Pete promises to give the fellows another chance at the trophies next year.

Latest count of members in the Indianapolis Model Power Boat Club shows there are 52. Interested parties may contact the group through Warren R. Pugh (6252 Kingsley Dr., Indianapolis 20, Ind.). Commodore Pugh offers a suggestion that his group has found useful; in a search for buoys for an R/C obstacle course, they hit upon the use of Styrofoam, the white bubbly plastic material used for insulation and for Christmas decorations. They made the buoys from a couple of planks of the material 4" x 5" x 10', cut into 5" squares. Old aircraft engine valves were used for anchors. Warren says the buoys won't scratch the finest finish on a boat, and are not damaged if they are run down in the water. Fishing line was run through the center of each block, with a button at the top to hold the line to any desired length. Holes were drilled in the blocks for holding the valves, when the buoys are stowed. We have found this material—also called Polyfoam—can be had the year around from most florists.

What do you do with old fuel cans? Most of us throw 'em away. Bill Baughman says he does too, as he can't think of anything much less useful but he opines that maybe some modelers have smart uses for these defunct containers. If so, we would like to hear of such uses—drop us a line.

Watertight hatches do bother George Brood, Jr. (3202 Topeka St., Corpus Christi, Texas). He wonders how to make such a hatch that will exclude the

This scene (left) and the one heading up the column this month from Corona, Calif., Naval Hospital model boat show put on by Southern California club, C. W. Hering's cabin cruiser maneuvering there.

water on a model sub, yet allow easy access for repairs and adjustments. We have seen good tight hatches sealed with a gasket of soft sponge rubber; the gasket has to be fairly soft material so that it will compress well all around the edge of the hatch. Latter must be strongly made, so it can be pulled up tight against the rubber gasket; rubber washers are needed under the screws that hold the hatch in place. Such a hatch would require quite a few screws around the edge, of course, and would be a bit unhandy to remove and replace in a hurry. Anyone have ideas on a truly watertight hatch that can be removed and replaced quickly?

A big electric motor is wanted by John M. Podzamsky (145 W. Washington, West Chicago, Ill.)—one that is bigger than the large Pittman Panther, but which will run on 6 V. We assume John wants this motor for driving the new boat he is working on, and that he has already given consideration to the use of two of the Pittman motors driving twin props. As far as we know there are no standard motors on the hobby market that are bigger and more powerful than the Pittman, and that will work on 6 V. Next step is to consider some of the motors used in autos—electric motors, we mean. We have heard of the use of car heater fan motors for boat drive purposes. Such motors are rugged, but not too expensive, since they are made in large quantities. There are other such motors used in cars that might be considered—those that work electric windows, for example. A 6 V. heavy duty motor is listed by Burstein-Applebee Co. (1012 McGee St., Kansas City 6, Mo.) that might do the job, though we don't know how it would compare with the Pittman. It is catalog No. 18B117, and costs \$1.69, so is probably worth taking a chance on. Surplus motors that will do what John wants might also be located, but most of these are 24-28 V. jobs and won't do much on 6 V. Polk's is also said to have a big powerful boat motor.

Commercial Notes. Another tugboat kit has hit the market, this one a product of Medley Mfg. Co. (Downey, Calif.). The boat is called the Cheryl Ann, and is a copy of one that has been featured on a television program. The model is 20" long and is to $\frac{1}{4}$ " scale, and the kit is unusual in several respects. For

one thing it is a "wet" kit, meaning that paint and cement are furnished. Also in the \$12.95 kit are a Wilson drive motor; twin flashlight cell holder and switch, a spring-type universal and a plastic prop. The tug has a fat hull, ideal for R/C installation. If you want to get one in the water fast, you can buy the finished boat ready to go for \$17.95.

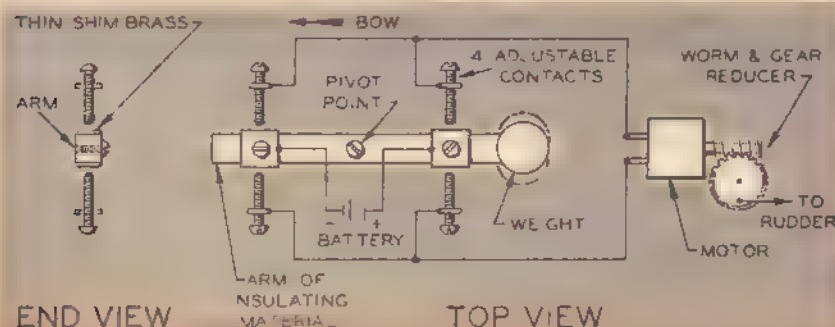
We learn that Forster Brothers (Lanark, Ill.), whose decision to go into production again on their reliable "99" air-cooled engine was mentioned in a past Column, have—as we predicted—decided to furnish the engine in the water-cooled version as well. For the present, the water-cooled jobs will be sold only on special order, and will be shipped 10 days to 2 weeks after order. Cost for this version is \$3.50 more than the air-cooled engine, which sells for \$26.50. Also on special order, Forster can supply either type with a double-ended crankshaft, so you can put the flywheel on one end and attach the prop shaft on the other. This double-ended engine also costs \$3.50 more than the standard air-cooled model. Now we hope to hear that Forster will supply the very effective throttle on these engines that they made at one time; it would be perfect for the R/C gang! Incidentally, Forster will allow \$5 trade-in allowance on any of these engines, if you send in one old model engine—any type, make or condition.

A whole new line of small electric motors will be carried by Polk's Model Craft Hobbies (314 5th Ave., New York 1, N. Y.). All of the same general design, there are five sizes ranging from #0 to #4; motors have double alnico magnets, bronze bearings, enclosed armatures, have low center of gravity for boat uses. #0 weighs $1\frac{1}{4}$ oz., is intended for $1\frac{1}{2}$ -3 V. and sells for \$1.00, while at the top end of the range #4 weighs 5.2 oz., is rated for $1\frac{1}{2}$ -8 V. and costs \$2.50. All the motors in this series are of low speed, high torque design; they are sold under the Aristo-Craft label.

Another new small motor of very interesting design being offered by Polk's is the Uniperim, a plastic-cased job of very high efficiency, with ball bearings, built-in reverse and stop switch, carbon-tipped brushes. It is also of low speed type, has double alnico magnets; it gives surprising torque on $1\frac{1}{2}$ V. at 200 ma., may be used on higher voltages, of course. Weight is 1.6 oz. and motor sells for \$2.50. Last but by no means least, Polk's still carry the remarkable Aristo-Rev motor (also known as the Distler) and price has been reduced to \$2.95.

Let's have your news! Send along photos and boating news to this column. We pay \$10 apiece for photographs used.

How to make a boat travel in a perfectly straight line? Archer has answer.



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GUIDE

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Don't forget the Union Carbide Scholarships for college freshmen. At Rensselaer there'll be three in each entering class, beginning with the class of 1956. These are open to high school seniors interested in future business or industrial careers, and the deadline is March 1, '56. Rensselaer chooses all recipients. For an application blank write to Director of Admissions, Rensselaer Polytechnic Institute, Troy, N. Y.

Are you served by the Pennsylvania Power & Light Co.? It has six scholarships, worth \$500 a year, for youths whose parents are residents of the company's service area in addition to being its customers (or customers of its subsidiaries.) Scholarships good at any of the 16 independent colleges in or immediately adjacent to said service area. Apply to PP&L for details.

By this time the seniors in your high school (perhaps including you) selected by your principal to enter, will have taken the preliminary tests for determining winners in the big Merit Scholarship program just established this fall. (You know: largest of its kind—200 full four-year scholarships worth up to whole cost of room, board and tuition for any course at any accredited American college or university; Ford Foundation, Carnegie Corp. of N. Y. etc. are participating sponsors.) But even if you or your best pal are not among the finalists who will be chosen the early part of the year, don't forget—and aspiring H.S. freshmen, sophomores and juniors, please note:

All runners-up in the contest, of whom it is estimated there will be 1400 this first year, will have their names publicized with all colleges, universities and scholarship granting agencies across the country. Which means that many of those who failed to capture a Merit award will nevertheless be offered scholarships which otherwise might not be tendered them, since the tests already passed will show they are desirable college timber.

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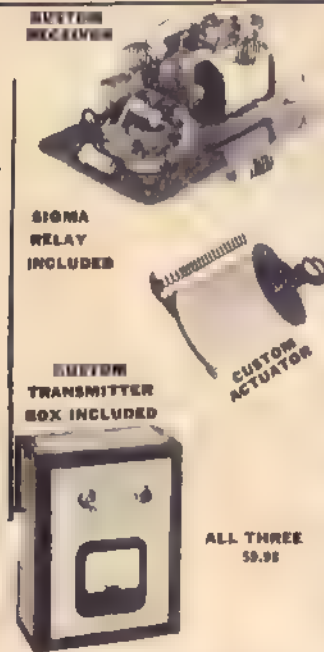
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ahead, write for pamphlet called "A Career in Patents," published by U.S. Patent Office, Department of Commerce, Washington, D. C.

Now you can again apply for aviation cadet training, following a several-month layoff period during which the Air Force accepted no cadets because of revision of the selection program.

Tell Teacher: The 15th and latest "Educators' Guide to Free Films," a nationwide listing of 3,069 titles from all sources, is now available from Educators Progress Service, Box 497, Randolph, Wis. \$6.

This year, there were three repeaters among the five college students receiving that many \$600 scholarships in naval architecture awarded annually by the National Association of Engine and Boat Manufacturers. These scholarships, which are renewable depending on the man's performance, are given each year to a total of five undergraduate students at the University of Michigan and M.I.T. (Their special purpose is to stimulate interest in small boat design.) Remember, if you want to study naval architecture, the two schools named and a third called Webb Institute of Naval Architecture at Glen Cove, N. Y. are the only ones in the country offering a four-year course in the subject. (In 1955, U. of Cal. at Berkeley added a naval architecture program—but for graduate students only.)

One of the fastest growing industries today is that concerned with the making of instruments. Electronics and automation will focus more and more importance on this as a field worth the future engineer's attention. To get an idea, write for the free pamphlet "Your Career with the Instrument and Control Industry," available from Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Pa.

Might be money in those cattails down by the old canal! Syracuse University has set up a Cattail Research Center, whose scientists predict that the harvesting of these swampland reeds will some day be a highly profitable business. The fluff or seed hair is a pure source of cellulose, with uses proven in War II. Flour processed from the plant may prove valuable for the making of penicillin, anti-freeze and cattail cookies. If you're interested in reading about what they've done, an extensive bibliography may be had by writing Leland C. Marsh, Department of Plant Sciences, Syracuse University, Syracuse, N. Y.

CAREER AS A SANITARY ENGINEER. If you're thinking of becoming a civil engineer, don't overlook the opportunities in that division of it known as "sanitary." Also referred to as a "public health engineer," he's the boy who designs and supervises construction and operation of sewage, industrial waste and garbage disposal plants, waterworks, and big projects of insect and rodent control. Take waterworks alone: he's needed there in the varied fields of supply, treatment and distribution of the precious stuff. Growing industry will want him (*hey, Chief, the town below the falls is yelling about those chemicals we're dumping into the stream!*), as will new population centers. A tremendous expansion is expected in the near future in the "areas" of waste disposal and water treatment, with recent advances in instruments and controls, in electronics and automation coming to the rescue of equipment and methods whose development has been much neglected since the war.

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Under Control

(Continued from page 66)

x 1 1/2" thick, has D.C. voltage ranges of 0-3-10-45-135-200, milliamp ranges of 0-1-5-25-50-500-1000, and three ohms ranges. Uses single pencil for latter. Meter sells for \$14.95, includes test leads and instruction booklet written especially for R/C users. Aristo-Craft 27.255 mc. crystal is metal-cased, will sell for \$3.95, activity guaranteed.

Polk's will stock two English sub-miniature pentodes that have proven very useful for output stage of two-tube receivers; they are the XFY-33 and the DL99, and have filament currents of 20 and 15 ma. respectively; price for either type is \$2.95 each. New ED actuator for steering boats and planes is a motor-driven unit, has limit stops and is geared way down for plenty of power; made to work on 4 1/2 V., unit draws about 550 ma. when running without load, but this current drain is only on when moving from neutral or returning to it. Actuator is intended for multi-channel receivers, where one tone can be used for each turn direction; it returns to neutral when the signal ceases. Price is \$12.95 and the unit weighs 4 1/2 oz.

Ripmax control box at Polk's is tiny semi-proportional job that sends out continuous pulsing signal, has two push-buttons, to cut signal entirely or give solid signal; it is about 1 1/2" square by 3 1/4" long, and is motor-driven type. No provision for continuous variation of pulse length, but box has a screw adjustment for setting neutral of control surface. Box costs \$12.95, operates on 1 1/2 V. at 150 ma. drain.

Polk's has several small items for the R/Cer—sub-min closed circuit phone plug and jack at 60c and 45c each; Fleaweight connection wire in 6 colors, comes 25' on plastic spool for 60c; they have small stock of very high grade surplus 4-pin plug and jack sets, with gold-plated contacts, cost \$1 per set.

Check Model Boating column, this issue, for details of whole new line of low cost electric motors available from Polk's.

Advance data on new elevator servo to be produced by Babcock Radio Engineering Inc. (Van Nuys, Calif.) tells us it will be of same general design as the discontinued Bonner-Babcock unit, but will have a motor that gives more power and action will be faster—about 2 1/4 seconds for full travel. It is designed for 3 V. operation. Price not available at this writing.

Conversion unit that transforms CG Electronics Corp. model R-1 receiver to two or three channels now being sold by this concern located in Albuquerque, N. M. Model RK-2 is for two-channel use, costs \$24.95, while the three channel unit is model RK-3, priced at \$31.95. CG has new illustrated folder of products which will be mailed free; ask.

Small but peppy proportional actuator is being sold by Orange Blossom Hobby Shop (1896 N.W. 36th St., Miami, Fla.). It is of double winding type, has 20 ohm coils and is intended for both rudder and elevator use on planes up to size of L. W. Cruiser. For the large planes, a double magnet unit is available, and sells for \$6.50; same unit with a single magnet for smaller planes costs \$5.95.

Gyro Electronics Co. (New York 13, N. Y.) offer MicroMagna transistorized Lorenz receiver, fully assembled and ready to work; comes with gas tube and transistor, relay, etc., sells for \$19.85.

Gyro carries two styles of Vulcan 25 W. electric irons, especially suited to use on compact R/C equipment; standard model sells for \$1.95. Deluxe model is more compact, has same heating element, costs \$2.45; both types use replaceable $\frac{1}{4}$ " dia. copper tips. Those working on audio tone experiments will be interested in surplus RC 57 receivers offered by Gyro; they come in aluminum case, have five Sigma 4F 5000 ohm relays, and five tuned filter circuits. Units are unused, come less RF tuning unit, but with seven $1\frac{1}{2}$ V. tubes and comprehensive Instruction Manual, sell for \$24.95.

Intended for use with a .15 c.c. diesel engine, the R/C model plane Electra will be offered in kit form by Wilshire Model Center (1326 Wilshire Blvd., Santa Monica, Calif.); price of the kit has not been settled as yet, but a most complete set of plans is sold for \$1.75. Model is a cabin design with strut-braced wings, and was designed by the German flier, F. W. Biesterfeld. It has 51" span, wing area is 403 sq. in., and empty weight is 30 oz. Maximum payload is 20 oz. Instruction booklet is printed in both German and English, as are the plans, and all dimensions are given in both metric and English systems. Wilshire is offering a very useful small plastic-cased electric motor for \$2.00; it weighs 1.4 oz., has copper gauze brushes and ball bearings. It is of slow speed, high torque design, draws 80 ma. on 3 V., without load.

New catalog from Ace Radio Control (Box 301, Higginsville, Mo.) will have pictures of every kit the concern sells, contains at least 22 pages. Catalog is free, will be sent to every customer who made a purchase in 1955; others may have copy upon request. Ace expects to have several kits for 50 mc. equipment in the near future.

Bramco R/C products will be distributed by Kay Specialties (Box 5197, Grosse Pointe 36, Mich.). Bramco throttles are made especially for .19-.35 engines, such as Veco, Fox, K&B, and the new Cub .29 and .35. Unit can be adapted to many other engines of various sizes, by simply drilling out venturi with a letter "L" drill (.290 inch), and sells for \$4.95.

Silver contacts for R/C experimenters are sold by Talmbay Specialties (135-14 Northern Blvd., Flushing, N. Y.) in several sizes and materials, at 35c per pair. They are about $\frac{3}{16}$ " dia., may be had in fine or alloy silver. Concern will also furnish contacts mounted on phosphor bronze spring strips, attached to bakelite blocks.

Surplus Items. Tiny 0-10 ma. meter mounts in 1" hole, can be had for \$3.95 from Peak Electronics (66 W. Broadway, New York 7, N. Y.); has no dial calibration, can be disassembled easily, weighs $1\frac{1}{4}$ oz., also sold in 5-0-5 ma. range. Same concern has 5000 ohm sensitive relay with all screw adjustments, will work on AC or DC at very low current; weighs about 9 oz., sells for \$1.50, is very well made . . . 8000 ohm used Sigma 4F-type relays being sold for \$1.95 plus postage by M. G. Moses (2526 Scioto Trail, Portsmouth, Ohio). Weight is about 2 oz. . . New, imported, $1\frac{1}{2}$ " dia. body, square 0-1 ma. meter is carried by Arrow Sales, Inc. (Box 3878, North Hollywood, Calif.); bakelite case is $1\frac{1}{8}$ " deep, price—\$3.95.

—HOWARD G. MCENTER

R/C READERS: SEND IN YOUR NEWS, PHOTOGRAPHS AND SKETCHES

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Annual Pictorial Review
of U.S. Military Planes

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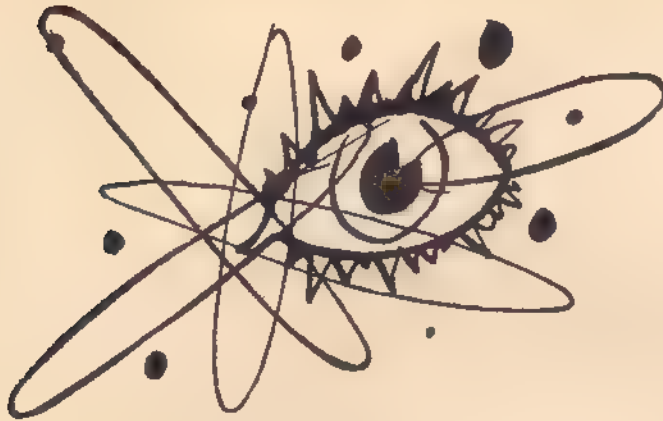
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ESPECIALLY DESIGNED FOR 049 IN-BOARD OR NEW INBOARD ENGINES

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Model Car News

(Continued from page 50)

Proto, but to no avail. Our informant, Bob More from Bethlehem, was down in sixth place with 146.57, usually a speed good enough for one of the top three places.

We hear from Carl Noward (1384 Berdan Ave., Toledo, Ohio) that car racing seems to be picking up all the time, and he hopes engine and car manufacturers will note this fact and hit the market with some new products—or start again to make some of the good old ones—like Dooling engines. It seems that Dooling couldn't follow through on their desire to go into production again; defense contracts were the reason.

Dooling engines were supposed to have been made again as far back as last April.

The latest word is that as of early September, Dooling is making a limited number of parts for engines, and will assemble same for sale, but apparently all parts and completed engines will have to be purchased directly from the factory.

They are located at 5452 W. Adams Blvd., Los Angeles 16, Cal.

News of the International Assoc. of Automotive Modelers. The May-June issue of the I.A.A.M. Bulletin was a "Racing Car Issue," while the July-August issue features the Chrysler line of cars, and its predecessor—Maxwell. Future issues will feature Aston-Martin, MG and other famous makes. Each of these Bulletins includes scale plans of cars, construction kinks, many very clear illustrations, as well as news of special buys of interest to the scale model car builder.

The I.A.A.M. Bulletin is included in the dues of members of the I.A.A.M., of course. They have a new publication—the IAAM Plan Book No. 1—which will be sold to members for 50c per copy, and to non-members for \$1. This is the first of a series of such plan books, to be published as authentic plans are collected; the first one contains outline and detail drawings of the 1946 Cicitalia Gran Sport, Porsche 1500 Speedster, Pegaso Z-102 Berlinetta, Mercedes-Benz 190-SL and W196R, 1928 Kissel White Eagle, and very complete drawings of the 750 cc. DOHC Austin racer. Dues to this organization are \$2 per year, and information may be had from the Secretary, Mr. Leonard Liebhaber (119-24 147th Street, South Ozone Park, New York).

A booster for rail racing is R. H. Stover (Route #3, Box 776, Milwaukee 16, Wis.), who writes that he greatly enjoyed our recent articles on English rail racing.

Bob has located several cars that might interest some of our readers; he found a McCoy Invader that has never been run, for \$30, and a Dooling Mercury front wheel drive car, which has never had a motor installed, for \$25. These are older types that take McCoy 60, Hornet or Dooling engines, and Bob feels they are about the last of their type in Wisconsin.

Brother Stover says the last track out there has been torn up, since the people objected to the noise, and ends up with the query—"Does anybody know where I can get a speed boat for a McCoy 60 engine?"

Another R/C Corvette made from an Ideal plastic kit is a project of R. Gibson (74 Chadwick Ave., Newark, N. J.). He followed the general layout of the R/C car shown in the "Radio Control Handbook," but used a homemade 3V4 hard tube receiver. Power comes from a Pittman boat motor, with friction drive to one rear wheel. The car is not complete yet, so no "performance data" was included.

Commercial Items. We hear of definite plans to import the Swiss Amro racing engine, and as soon as the deal is settled, we will carry the details here. This is a .61 cu. in. engine along the lines of the Dooling, and of top grade Swiss craftsmanship.

A Model Race Car Directory, containing names and addresses of concerns known to be producing cars, engines, parts, fuel and hop-up services may be had from American Miniature Racing Car Association headquarters, 1384 Berdan Ave., Toledo, Ohio.

Tee-Jay

(Continued from page 27)

provements. We upped the power from Space Bug Jr. to the souped-up Thermal Hopper, but the model will fly well on the milder engine, and we see no reason to suspect it might not have acceptable performance with any good .049 to .074. For that matter, those who do not have access to suitable free flight areas could modify the model to control line use as suggested in the small sketch.

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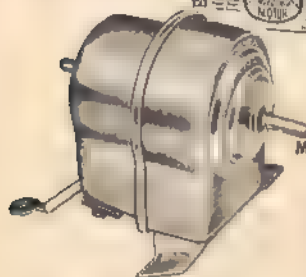
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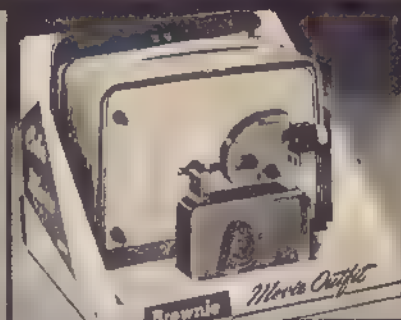
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Mossberg Model 140K is a .22 cal. 7-shot clip-type "Sporter" rifle equipped with the Mossberg 4M4 sighting scope. All Mossberg guns are sold through dealers, none from the factory. However, the big Mossberg catalog is free for the asking from O. F. Mossberg & Sons, Inc., New Haven 5, Conn.



Portable jig-saw by Dremel Mfg. Co., Racine, Wisc., has 15" throat, is electric powered and combines extreme light-weight with high productive capacity. Called the Model 13 Moto-Jig Saw, the machine has a built-in rotary motor and new blade suspension system called "Rocker Action." Weighs 12 lbs., saws to the center of a 30 inch circle. Table may be raised, lowered or tilted to 45 degrees. \$29.50 with motor.



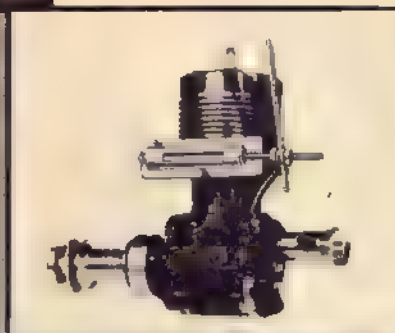
Urani-Tector uranium kit is a pocket-size daytime black light device using ultra-violet from the sun with which you can check for the fabulous metal right in your own backyard. In fact, CGM Industries, Box 611, Laramie, Wyo., say two boys did stake out a uranium deposit found by means of a Urani-Tector kit. Urani-Tector with one ore sample is \$3.89; complete kit with instructions is \$8.49.



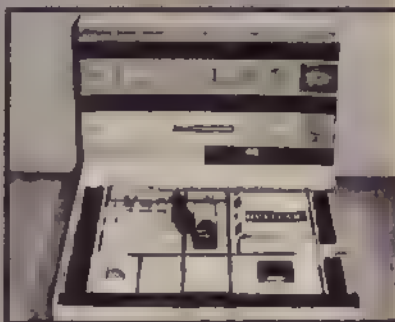
Pyre Plastics Kentucky Rifle construction kit was designed from the famous frontier long rifle. You get all parts to assemble an actual size (4'5") rifle. All parts are molded of plastic in either walnut grain or gun metal colors. For added realism the hammer, trigger, frizzen and patch cover actually work. Kit is priced at \$4.95.

SHOWCASE

Newest type throttle for model airplane engines is the Roto-Valve distributed by Joe's Hobby Center, 9830 Wyoming, Detroit, Mich. It opens and closes the exhaust ports for a wide range of speeds from 1,500 rpm. Comes in two models: "A" for .15 to .35 engines and "B" for .36 to .65 engines. Price is \$4.95. Clamps to exhaust port add about $\frac{1}{8}$ " in exhaust stem length. For radio control or U/C.



Optileb by Teen-Tech Co. presents the fascinating facts of refraction, polarization, reflection, color, microscopy, projection, magnification and 3-dimension pictures in easy-to-understand manner through the use of various pieces of test equipment furnished in a kit which includes parts for constructing an optical bench of your own. With kit you build a powerful, focusing telescope and periscope. \$16.95.



Marine universals for boats powered by McCoy engines now made by Midwest Products Co. \$1.25 coupler fits .29 and .36 McCoy powerplants. Companion units for $\frac{1}{4}$ " or $\frac{3}{16}$ " shafts sell for \$1.



A .22 caliber target rifle with precision ammunition to match is latest by Remington Arms Co. New pair are the Model 40X .22 rifle and Remington and Peters .22 cal. match ammunition. The 40X is completely new from butt plate to muzzle. Prices are: 40X-S1 (standard barrel with sights), \$125.60; 40X-S2 (without sights), \$95.35; 40X-H1 (heavy barrel, sights), \$137.15; 40X-H2 (without sights), \$106.90.



Newest item offered by Pactra Chemical Co. in their line of finishing materials for the craft and hobby enthusiasts is "Glitter," a colorful decorating material. When applied over an adhesive, Glitter forms millions of tiny reflecting crystals. Glitter comes in 10 colors and is packaged in both shaker top jars for 25c, and in clear plastic vials for 19c. Special "Glitter Adhesive" available in jars and pen-tubes.



DARWIN SPECIAL COMBAT and TRAINER

Complete ready to dope and fly.

For engines .19 to .36

Wing span 37 1-2" Length 24"

The Darwin Special Combat and Trainer is complete ready to fly, not prefabricated but completely built, no gluing or papering, just mount your motor, the New Darwin profile fuel tank and dope.

At your dealers \$9.95

DARWIN MODEL AIRCRAFT ANN ARBOR, MICH.

Find URANIUM

THIS IS A SCIENTIFIC INSTRUMENT Not a TOY

You CAN STRIKE IT RICH!

For only **\$8.49** Post paid

Now you can prospect at low cost! New invention using sun's energy! All you need for prospecting for all types of uranium. More reliable than Geiger counters for determining uranium value! URANIUM-TECTOR folds for carrying in shirt pocket. Used by professionals, boy scouts, and everyone! Includes 4 valuable uranium ores. Postpaid. Money-back guarantee. Dept. YM-12, CMG INDUSTRIES, Box 611, Saratoga, Wyoming, or your dealer.



Jim Walker "FIREBEE" NEW! Remote Control Throttle

provides a self-learning plane you can take off and land at will—a plane you can fly slowly, quietly, without fussiness. You can shoot landings with the "Firebee" hover in mid-air, land and taxi in, refuel with the engine running, take off again! COMPLETE KIT INCLUDES fuel tank with "anti-stall" reservoir and filter, smooth-finished parts, U-Control handle, flying lines, prop, canopy, landing gear, wheels, hardware, decals, flying course. Jim Walker "Fire-cracker" Engine with New "Power & Silencer Control."

\$1250

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1166 N. E. 31st Ave.,—Portland 12, Ore.

MODEL PLANES

MAKE IDEAL

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Guillow's

GUILLLOW'S REACTOR

Performs like a thing alive... has a fully tapered wing with a 46" span. Completely pre-fab and includes everything but motor, tank, and liquids. Photo illustration plan shows each step of assembly for this two foot long 'trigger quick' plane for combat, stunt, and precision flying.

\$4.95

GUILLLOW'S NEW TRIXY \$5.95

A two and one half foot swept wing beauty with the lines of a modern strato-cruiser. The thrill of having this plane on the end of a control line cannot be described. It will out-perform all others in the air.

GUILLLOW'S Profile BASIC TRAINER

... the ideal control line model for beginner and expert alike. The fixed flap design eliminates the need for offset rudder, motor, and wing tip weight. A cinch to assemble in less than two hours.

Visit your local Model Store
for GUILLLOW'S KITS
ranging from
10c to \$6.95

PAUL K. GUILLLOW
Inc.

WAKEFIELD MASS.

If not available at your Hobby Dealer send direct to factory
adding 25c packing and postage in U.S.A., 40c outside U.S.A.



**NICK CARTER
MASTER
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Suspense-packed
case histories
with America's top
fictional sleuth.

SUNDAYS
See radio listings
for local time
and station.

**MUTUAL
Broadcasting
System**

What's in the Name . . . ENGLAND AFB?

(Alexandria, La.)

Hq. 368th Fighter Bomber Wing named in honor of the late Lt. Col. John Brooke England. Col. England received his flight training in 1942 and was commissioned as Second Lieutenant in March 1943. In October of the same year he was assigned as fighter pilot to the Eighth Air Force in England. While escorting heavy bombers over France and Germany he flew 108 missions and destroyed 18 enemy aircraft. In 1944 he was promoted to the rank of Major at the age of 21. Following his return from action he continued serving in the Air Force, attaining position of Chief Fighter Weapons Section in the Fighter Branch of the Directorate of Operations. In 1954 he went to France on temporary duty as Commanding Officer of the 389th Fighter Bomber Squadron. He died in a crash while attempting an instrument approach at Toul-Rosieres, his home field, by deliberately swerving from his path on a final glide in order to avoid hitting the field barracks, sacrificing his life in order that others might live.

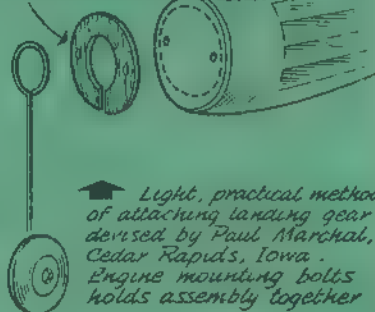
Next Issue of "YM"
"FIGHTER PROGRESS"
by Walt Jefferies

Household type vaporizer can be used for removing warps in built up wings and tail parts. Tip From Frank Levy, Hastings-On-Hudson, N.Y.



Twist out warp while steaming, hold in position until cooled —

Plywood disc thickness equals gear wire dia.

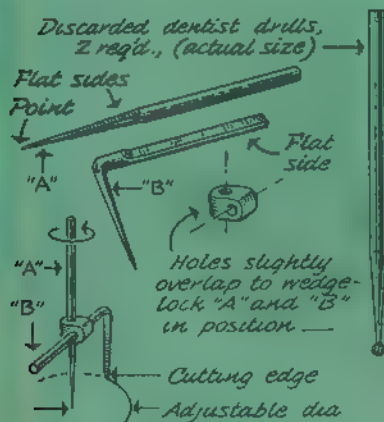


Light, practical method of attaching landing gear devised by Paul Marchal, Cedar Rapids, Iowa. Engine mounting bolts holds assembly together

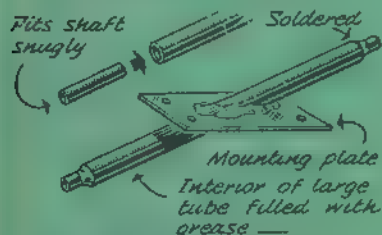
MODELS

Sketch-book

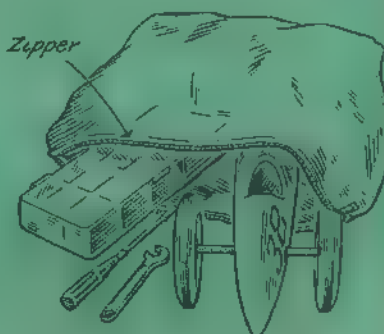
Have you developed something new in construction, control, operation or finishing of model craft? Send a rough sketch—we redraw it and pay \$10 if accepted. Only original ideas; no entries returned.



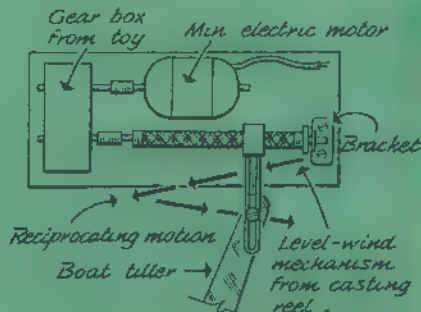
Lightening holes can be easily cut in balsa, plywood, with this tool made from dental drills by Robt Gunnerson, Englewood, Colo. Use in small electric motor or hand drill. move work toward cutter —



Simple "stuffing box" made of brass or copper tubing. O.D. of small end tubes fits I.D. of large tube. Submitted by Jere Lansinger, Akron, Ohio —



Ideal container for car, boat or speed model when transporting in car trunk is plastic pillow case. Contents visible through cover, protected from dust and dirt says Robt J More, Bethlehem, Pa.



"Proportional" actuator for remote control made from inexpensive motor, gearbox from toy, E-level-wind mechanism from casting reel. Built by George Haynes, Harlingen, Tex.



One of the smallest precision motors ever built yet does GIANT SIZED 1085 Drives Motor, Planes, Boats. Construction Sets, Working Models, Trains, and Cars, etc. with amazing speed up to 6000 R.P.M. or as low as 50 R.P.M. using the red motor box set that come with this exciting set. THIS MIGHTY MIDGET does hundreds of jobs. It's a Honey. Looks exactly like a Big Motor yet measures 1 1/2" and weighs one ounce. For only \$2.98 YOU GET LOTS MORE with this Mighty Motor. You get a complete set of 4 gears and pulleys and a patented multi-ratio gear box as well as a battery (up to 100) but does a power your kit and in strict ones. NO SPARKS OR SHORTS, NO TRANSFORMER NEEDED. Reverses immediately too! Endless hours of fun. For the check or money order for \$2.98 for this entire set and we will pay postage. C.O.D. orders plus postage.

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WORLD'S FINEST
✓ **Bonner**
RADIO CONTROL
DEVICES

COMPOUND ESCAPEMENT
Four position, self-neutralizing control unit gives multiple controls on single channel.

\$6.95

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BONNER
Specialties 1900 Tilden Ave. New York, N.Y.

MINIATURE ENGINES

GASOLINE STEAM

BUILD THEM YOURSELF — IN YOUR OWN SHOP WITH YOUR OWN TOOLS
Anyone with a 6" or 8" hole and a drill press can make them

IDEAL SCHOOL SHOP PROJECT

Send 10c for Illustrated Catalog or Miniature Engine Catalog and Drawings

OCTURA MODELS
Box 536-HF Park Ridge, Ill.

THE ROOKIE TRAINER

SENSATIONAL CONTROL MODEL



Send 10c for Comet's New 1955 Catalog

• Kit T-6

Fun for the beginner—thrills for the expert! SHAPED fuselage parts, wing, stabilizer and rudder, motor mount shaped and drilled, landing gear, wheels, etc. Suitable for Class "B" or "C" engines. 35 1/2" span

\$3.50

COMET MODEL HOBBYCRAFT, INC.
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SEE MORE **GYRO** SPECIALS ON
OPPOSITE PAGE
ALL MATERIALS BRAND NEW & GUARANTEED!

AT LAST! SuperSensitive TRANSISTORIZED Lorenz Receiver.

- Follows fast fading (no delaying cascaded diodes used).
- Lowest Battery Drain of any Receiver on the market.
- Only 50 Ma "A" and less than 4 Ma "B".
- Relay current rises up to 3 Ma. with signal.
- Up to 7,000 hrs. Transistor life and very long tube & battery life.
- Transistor not damaged by hardest landing!
- Sensitive—long distant control
- Reliable—no "touchy" adjustments
- Very Small—only 1/4" x 2"

Completely wired & tested with relay only \$19.95

McMURTER'S "RADIO CONTROL HANDBOOK"	2.29
R C BOOKS Berkeley St. Safford St. Appl. of R/C	.50
METERS Accurate 2" sq. 0-1 Ma.	2.65
0-5 Ma. \$2.79; 0-5 Ma. \$2.89; 0-50 Ma.	2.75
GYRO DIRECTOR TRANSMITTER #1, with cabinet crystal, tube, antenna, keying switch, full instructions	12.49
NEW LORENZ deluxe TRANSMITTER RH (AUG. M.A.N.) with tubes, crystal, 40 ohm chassis, sound coils, case, antenna	16.95
CRYSTALS, 27.255 Mc Peterson ZDA 3-95, holder	.15
SISC MAGNET for proportional control, 1.16" diam	.98
OSR type Quench coil \$1.65, for MINI-MAC	1.25
WHIP ANTENNA, 3 sec. 30v 1/2" 1.85 with base	2.75
MINI-MAC TRANSMITTER PULSER A7 Oct 55 Basic parts inc.	
Resistors Condensers pots 47 Reay case etc	12.99

POWERFUL GYRO TRANSMITTERS

IMMEDIATE DELIVERY The Most POWERFUL 5 Watt TRANSMITTER at the LOWEST PRICE! Famous 2 Tube MAC II circuit featuring GYRO MAGIC TUNING INDICATOR. Completely wired & tested. Includes 9 1/2 ft sectional Antenna, remote d chkr. Keying Switch Meter Ground Plane Booster Beautiful Cabinet 12 x 7 x 6. Available in the following models—all with money-back GUARANTEE

GYRO X1 TRANSMITTER as described with built in 2 volt 50 age B1 battery 2 Volt vibrator Supply Battery Charger. Nothing else to buy. Complete \$39.95

GYRO X2 TRANSMITTER as described, with built in dynamotor for operation from 6 Volt Auto Battery. Complete \$39.95, for 12 V opar add 2.00

GYRO X3 TRANSMITTER, as described, but for dry battery operation, using 1 tube Complete (less batteries) 23.95

NEW GYRO DELUXE ZT TRANSMITTER

Operates any 27 1/2 Mc STANDARD or AUDIO TONE (WAG, Deacock Receiver. The on v high powered Transmitter offering both Standard & Audiotone Modulation, your choice by a flick of the switch. It incorporates all features of the famous MAC 2 MODEL X-3 with 5 W. power! only 48.50

LORENZ MOPA Deluxe TRANSMITTER. Complete otherwise identical to GYRO X1 above w/ 1 battery charger, etc \$44.45

LORENZ MOPA Deluxe TRANSMITTER for Audiotone or Standard Receiver, otherwise identical to GYRO ZT \$48.40

MODEL X MAC II 2 Tube TRANSMITTER KIT as used in GYRO transmitter. Only 3" x 4 1/2" x 1 1/2" Comp. size w/ tubes & crystal ready to install in your case \$10.95

STONEMAN SPECIAL: Wired & tested Powerful 1 Tube TRANSMITTER. Replaces PULSERS. Sens. 1 tube RECEIVER Plus 500 uF capacitor ESCAPEMENT. Nothing to buy except batteries 29.85

GYRO R/C Deluxe SPECIAL Ready to Fly Complete GYRO X1 Transmitter. Lorenz 2 Tube Receiver and Compound Escapement \$63.95

Brand New 2 V. VIBRATOR TRANSFORMER used in PE157 Output 180 V. 3. Min. 1000 ohms 2.50

STOP WASTING MONEY on dry batteries for your transmitter. Add our 2 VOLT VIBRATOR SUPPLY to any transmitter. Output 35 to 180 V., assembled \$10.85

2 VOLT VIBRATOR SUPPLY KIT with 5 lead base \$6.95

DEEP BOX Full Pain. Rotary Type for any Self-Neutralizing Escapement. Not a Kit 1.05

Low Cost PROPORTIONAL CONTROL added to any Transmitter & Receiver. Works with any Actuator. COMPLETE KIT of parts & diagrams for TRANSMITTER PULSER, incl. case Electronic PULSER KIT (WAG) with 2 tubes & Relay Kit read & Tested \$11.95; RH 7.45

New! Mega RELAY PULSER KIT (Sept. '55 M.A.N.) \$7.65

ACTUATORS Adams \$8.45; Flyball \$7.65; Southwestern \$3.95

PEEKWORTH 1000 Ohm RE 25 7/8" 15" 15" 28

SIGMA 47 RELAY COILS; for replacement \$1.85, 10K 1.70

SOCKETS; mini, hearing aid, 4 or 6 pin .18

Mini 7 pin 100; Loket or octa 280 for 2 2.30

PLUS 6 SOCKET 3 or 4 pins, pr. 7 pin plug & socket .40

LORD SHOCKMOUNT 150; Min 7 pin plug & socket .40

RELAYS: 4175 Sens live 10,000 ohms SPOT 1.85

ADVANCE RELAYS \$2.90, Price Relays \$5.25 S GMA 287 8.30

ESCAPEMENTS Bonner Mini \$8.95 ED MARK II 8.30

New! BARCOCK Super COMPOUND ESCAPEMENT 7.85

BONNER COMPOUND makes 1 channel duplicate 3 channel C 2125N P CN \$5.95 SE \$7.95 SUPER AEROTROL \$3.95

NEW! NEW! MINI ESCAPEMENTS \$7.95 High Res Hanco 8.95

DRECO SERVICE 2PM \$14.95 Motor Control 2.95

Electron JOY STICK CONTROLLER Automatic Bump Box & Escapement Controls Rudder Elevator plus 3 additional controls. Fits any Transmitter & Receiver. Both for 32.95

SEE OTHER GYRO AD OPPOSITE PAGE

GYRO ELECTRONICS CO.

325 Canal St., New York 13, N.Y., WOrk 6-1290

TIRED OF SPENDING
YOUR FLYING TIME
ON THE GROUND?

Because of



NEEDLE VALVES THAT RUST AND CORRODE

NEEDLE VALVES THAT DO NOT FIT
NEEDLE VALVE BODIES PROPERLY
BECAUSE OF EXCESS PLATING

NEEDLE VALVES THAT BREAK AT THE
SPRING POSITION BECAUSE SPRING
LOSES ITS TEMPER DURING SOLDERING
OPERATION

Manufactured and Fully
Guaranteed by

KAPPAK
PRODUCTS
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CHICAGO 18, ILLINOIS

ONLY KAP-PAK FUEL TANKS ARE
GUARANTEED TO ELIMINATE ALL OF
THESE PROBLEMS and Keep You Flying!

CHICAGO 18, ILLINOIS

GUILLLOW "WING"



BLUE
RIBBON



"YM"
AWARD

There are a number of good features about Lou Andrews' "Reactor" control line model. Produced by Paul K. Guillow Inc., the assembly techniques are close to those found in the old Guillow "glider kites." Or to put it another way—extremely simple. With a wing area of 525 square inches, this combat model calls for engines from 19 to 36 cubic inch displacement. But because it's a flying wing that doesn't look like a "plank" we are predicting great things for it. Wingtips are already formed of plastic. A series of 45 photographs shows each construction step. Wing span is 46 1/2 inches, overall length 2 feet. Ready to go, the Reactor weighs in at about 24 ounces. (Checkered rule is marked off in inches.)

BLUE
RIBBON



"YM"
AWARD

No kit this, not even an "assembly" set. This Fleet-Line "Dolphin" is an outboard motor boat sure to delight any young sailor. It's sold with one of K & O's miniature electric scale outboards—an Evinrude or a Johnson. Length of craft is a shade more than 16 inches, beam is 7 inches. For best operating set-up as far as batteries are concerned you are referred to YM's report on these miniature electric motors in the November issue. A block of expanded Polystyrene is supplied in the bow of each "Dolphin" to help maintain buoyancy in event of a serious collision. Hull is one-piece heavy plastic, white outside, brown inside. Decking and seats are wood.

K&O DOLPHIN



MEDLEY'S TUG



BLUE
RIBBON



"YM"
AWARD

■ Only an old-time model ship builder can really appreciate how much work the Medley Manufacturing Co. has spared you with its new all-plastic operating tug model "Cheryl Ann." This craft is based on the work boat you see on Preston Foster's television program "Waterfront." Complete, needing only the installation of the motor and propeller accessories, the 20-inch hull has a beam of nearly 7 inches. All superstructure as well as the deck have been beautifully molded. Decks are in brown, the hull in black and vertical pieces in white. A Wilson electric motor is supplied along with Pactra plastic C-Ment. A happy combination of the model builder's and plastic former's arts!

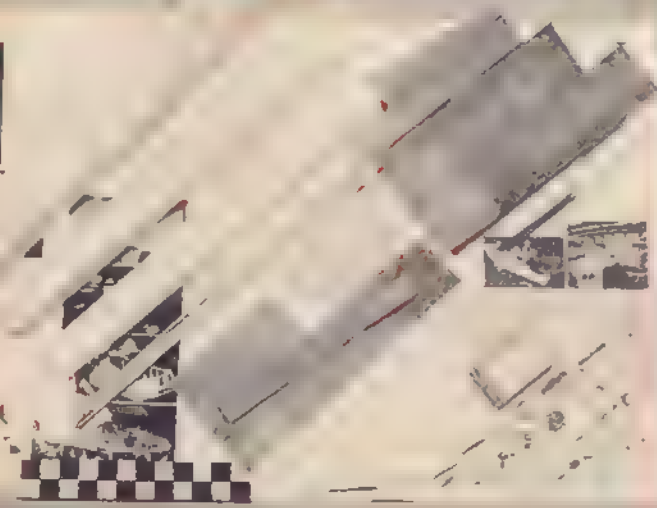
■ Here is a boat model nearly 3 feet long with a beam of almost 1 foot. It's Dumas' miniature version of the Chris-Craft 35' Sport Fisherman complete with flying bridge. The colorful red, white, blue and black box contains a "lumberyard" of balsa wood. Fifteen $\frac{1}{8}$ " thick sheets are die-cut and stamped with the name of various parts; 34 other sheets are supplied for planking. Die-cut mahogany sheets and metal fittings round out this big construction project which is scaled 1 inch to the foot. Building instructions are minutely detailed; the plans contain all the numbered parts found on the die-cut wood sheets. Deluxe fitting set of 48 pieces available.

BLUE
RIBBON



"YM"
AWARD

DUMAS' C-C



GYRO FREE New Radio Control Catalog

The Most Progressive & Reliable
RADIO CONTROL SUPPLIER

See Add'l. GYRO SPECIALS on Opposite Page

ALL MATERIALS BRAND NEW & GUARANTEED

NEW R/C GYRO TESTER: Transistor Amplified FIELD STRENGTH METER has 10 times more Sensitivity—Checks 3 & 30 Mc. Complete in small case, Tested & Guaranteed \$12.95

KIT

GAZISTOR RECEIVER KIT (July A.T.) w. sub min. Pot. wound coils, drilled base \$3.40

with tube & Transistor \$9.20; with relay 14.10

SUB MINI Phone Jack—Open Circuit 39c; Closed .45

NEW SUB MINI Phone Plug for 100v jacks .55

SUB W. GEM RELAYS, 5000ohm \$4.85; 7500 \$3.40, 10,000 ohm. 12.95

BARCOCK New 8 Position Control \$7.75

ZEBRA TRANSMITTER (Sept. A.T.) Base Kit

SPECIAL TRANSMITTER, RECEIVER & ESCAPEMENT

Including Tubes & Relay

A Powerful 4.5 Watt Transmitter & Supersensitive Receiver for 27% Mc. Radio Control. NO KNOWLEDGE OF RADIO \$9.85

NEEDED TO GET WORKING

FREE with above kits BERKELEY ESCAPEMENT (Not a KIT)

1 SIGMA 4F 5000 Relay \$4.25, 3 for \$11.80

2 FLEA CLPS 4 for \$11.80

3 LORENZ RECEIVER KIT Complete with 1AG4 2nd \$12.85

Stage & RK-61 \$8.00, with Sigma 4F Relay

4 MIGHTY MIDGET ELECTRIC MOTOR WITH GEAR 2.75

5 COMBINATION R/C TEST METER, Checks Field \$14.95

Strength, 27% Mc., Resistance, Volts, M.amps

6 GYRO 6 NEED RELAY permits 6 controls with diagram \$14.95

7 GYRO 3 TONE MODULATOR KIT works with any \$0.45

transmitter Suitable for tuned relay or Safford

Receiver (tested \$11.85); KIT \$0.45

8 AUDIO TONE MODULATOR Plug into any Transmitter \$7.95

gives Audio tone signal tested w. bat. & instr.

9 Every Transmitter Needs One FIELD STRENGTH \$1.00

METER KIT with crystal & wound coil, 27% Mc. 1.35

with C-3 Ma. Meter \$3.75; Wired & Tested add 1.00

10 LORENZ DOUBLER Receiver Kit: Less than 3 Ma. RK61 \$14.45

Drain, Doubler Circuit driving 1AG4 & SIGMA 4F Relay

CONVERT your regular Lorenz to Doubler Operation Kit \$3.25

with 1AG4 tube, diodes, cond., instruc.

11 RADIO CONTROL RECEIVER KITS 27% Mc. \$9.95

NOTE: All GYRO kits are guaranteed complete deluxe types

with diagrams—nothing else to buy!

12 LORENZ 2 TUBE with 2 pots and wound choke \$3.35

Complete with long life RK-61 & XFG-1 \$9.75

13 Above with tubes & Sigma 4F Relay \$13.95

14 MINI-MAG w. Spec. Quench Coil, Wound Choke \$4.25

Complete with CK326 Tube and ED RELAY \$11.45

15 MILLER w. SIMPLE SINGLE with OSR type QUENCH COIL & \$0.95

Wound Choke 4.45; Complete with Tube & SIGMA 4F Relay \$4.75

16 JOHNSON 3 Tube with SUB QUENCH CHOKES \$13.85

Complete with 1 Tubes & 1/4 4F 3000 Relay \$1.00

17 ABOVE KITS with Drilled Base add .25

18 ABOVE KITS with 1/4 1/2 inch easy to operate, add \$0.50

19 TRANSMITTER & RECEIVER KIT Parts and diagrams \$9.95

(less tubes & crystal) to build famous MAG II

Transmitter Unit and LORENZ RECEIVER, with \$9.95

10,000 ohm relay w. drilled bases & wound coils

20 BATTERY EXHAUSTOR BB34-A 1 V. 3rd 25V-27 Amp. Hours \$2.75

21 NTS, Man., 6 Volt 25V-27A-27A \$2.40

22 2.6 volt BATTERY CHARGER, wired & tested \$0.65; KIT \$4.95

23 CHARGER for 2V or 1.5V Btry. from C-3 Ma. Meter \$2.25

24 CHARGER FOR DRY BTRIES: Use 1 set of A & B's 1 season! \$0.50

25 Re-charges all 1 1/2 to 90 Volts \$7.95

26 DYNAMOTOR, 6V/180V 100 Ma. or 250V-50 Ma. \$1.00

27 V. BRATORS, 6 Volt \$1.35; 2 Volt Synchronous \$1.00

28 RELAYS JACK, open c. 70u; 10c Closed 25u; PLUG for JACK \$1.15

29 MINI PLUG & JACK, for metering, etc. 100u; RF CHOKES \$1.00

30 Submini. CLOSED CIRCUIT JACK & PLUG (RCA type) or \$1.25

31 Bakelite BOARDS for Receivers: 25u; Drilled for Lorenz \$1.75

32 1/2 inch Miller or Mini Mac 50u; Drilled for F.R. Rec. \$1.15

33 SWITCHES, Toggle SPST, 300u Slide Switch \$1.00

34 KEYING SWITCH, remote new micro "cl. ch" type \$1.00

35 POTENTIOMETER, metal 10,000 or 25,000 Ohm; 100,000 Ohms \$1.50

36 POT., dime size 10,000-25,000 Ohms \$1.00

37 Dime size 100,000 Ohm \$1.00

38 CONDENSERS and RESISTORS, most sizes \$1.00

39 CERAMIC TRIMMERS, 3-30 mmf. or 7-45 mmf. \$1.00

40 PADDER, For Simple, Single or Mini Mac Sets \$1.00

41 VARIABLE CONDENSER, air type screwdriver shaft, \$1.00

100, 125 mmf 50u; 15, 25, or 50 mmf. \$1.00

42 PLATE COIL CTC, adj. iron core 25u or 14u \$1.25

43 Wound for Lorenz, S. Single, Johnson, Mini Mac \$1.00

44 NEW TUBES, For All R/C Sets. — LOWEST PRICES.

45 LONG LIFE RK-61 Tube in stock for GYRO KITS

46 12AL6 diode \$1.45 12FD-1 \$3.20 300B \$1.00

47 1AB4 \$1.95 2A4 \$1.95 354 \$1.95

48 1B4, 1B6 \$1.95 304 \$1.95 3V4 \$1.95

49 1U4, 1U5 \$1.95 1A5 \$1.25 8K4 \$1.95

50 1V5 \$1.95 1B4 \$1.95 1B5 \$1.95

51 1V5 \$1.95 1B4 \$1.95 1B5 \$1.95

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Radio Control Review

Aristrol 3-D Receiver Kit Utilizes Three Diodes in Voltage-Tripling Circuit



■ Intriguing name of this receiver stems from the fact that it has three diodes in the circuit. Basic circuit is quite like the popular 2-tubers, which utilize a gas tube in the first position and either gas or hard tube in the second. However, use of the diodes in a voltage-tripler circuit allows lower idling current for the first tube, and insures that the plate current of the second will be held at zero, when no signal is coming in.

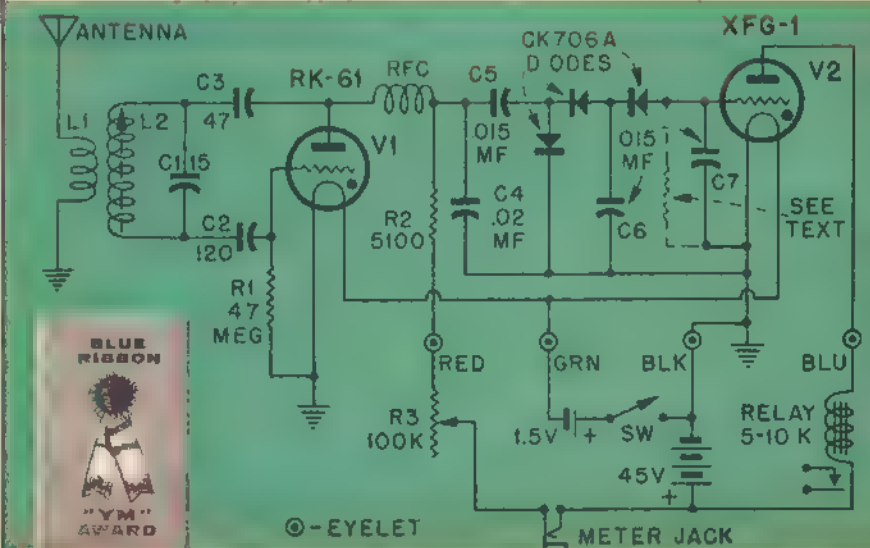
Sold only as a kit, this receiver from Aristo-Craft Miniatures (Newark 5, N.J.) comes packed in a neat little plastic box (the box would make a fine protective case for the receiver—just cut notches in it for the leads and tuning screw, and pack with sponge rubber) and includes cable plug and socket, and a sub-miniature 100,000 ohm potentiometer. Relay and tubes are not included.

A glance at the circuit will show that the first tube, which must be an RK6-1, is tuned by a slug in L2. L1 is movable to a certain extent, and is set to secure the degree of sensitivity desired. R3 is mounted externally to the receiver, and

sets the idling current of V1. The C and R numbers on the diagram correspond to those you will find on the printed-circuit plate that is furnished in the kit. The four power leads terminate on the plate in eyelets, to which are connected the four colored leads for the power cable. Colors are as indicated, but the cable plug and socket have been omitted from the diagram.

Though you have no choice in tube V1, you do have a wide selection for V2; either an XFG-1 or any of a variety of sub-miniature power pentode tubes may be used, and some of the latter have filament currents as low as 15 ma. Such tubes should not be used at a plate current much higher than 1.5 ma., however, so tubes like the 1AG4 are preferable. The 1AG4 can run at 4 ma. plate current, and you will get just about this with a 5000 ohm relay.

The printed-circuit plate is drilled for all components, of course, and the location of all component leads is clearly shown. As with any such base plate, an iron with a small tip, and nothing but



radio-grade rosin core solder, should be used for assembly. There are no provisions for mounting the completed receiver, but the instruction booklet shows several ways to do this, or you can put it in the plastic box, as mentioned above.

Tube leads are held in flea clips—four for each tube. If a hard tube is used at V2, there will be five leads to accommodate; plate and screen grid leads (the two nearest the red dot on most hard tubes useful in this connection) will go in the clip marked "P" on the base plate.

An extra resistor of 1 megohm value is furnished in the kit and is intended for use if the receiver is to be pulsed at a very high rate. This resistor is connected across C7, as seen in dotted lines on the diagram. We found the set pulsed at quite a high rate without this added resistor, however.

The test receiver went together with no trouble; tests were made with a 1AG4 tube as V2, and it was found that the plate current of this tube could be held at zero when V1 was idling at about .25 ma. Upon signal, V2 would rise to 3.9 ma, with a 5000 ohm relay, and to 2.75 ma. with an 8,500 ohm unit.

The relay is not mounted on the receiver chassis, so the latter does not require flexible mounting—vibration will not bother it. However, sponge rubber crash protection is good insurance. Due to the large current change available from V2, a very wide variety of relays work fine with this receiver.

The 18 page instruction booklet furnished in the kit is very complete, and the builder should have little trouble in assembling the 3-D and getting it working, providing he reads the book carefully, and follows the assembly instruction. This is particularly true of the diodes, which must be mounted as shown.

Specifications. Aristol 3-D receiver—two tube Lo-rens circuit using 6X81 plus either hard or gas tube. Overall size (relay not included) is 1 1/2 x 2 1/2 x 3/4" thick. Tuning by means of threaded and slotted stud. Externally mounted variable resistor is required. Relay—any sensitive type with coil resistance from 5000 to 10,000 ohms. Recommended antenna length—20". Weight with tubes and power cable and plug—1 1/2 lbs.

Power Requirements: A battery—1 1/2 V. at current drain of 65 to 100 ma. (depending upon second tube selected). B battery—45 V.; first tube idles at .2-.3 ma., drops almost to zero on signal. Second tube idles at or close to zero, rises from 3 to 4 ma., depending upon type selected and relay resistance. Small B batteries usable with this receiver because of very low total idling current.

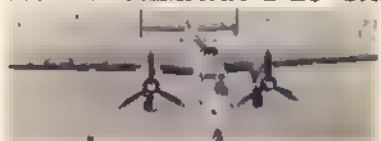
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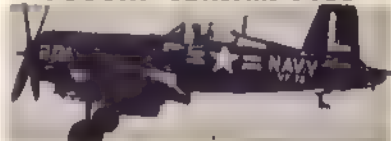
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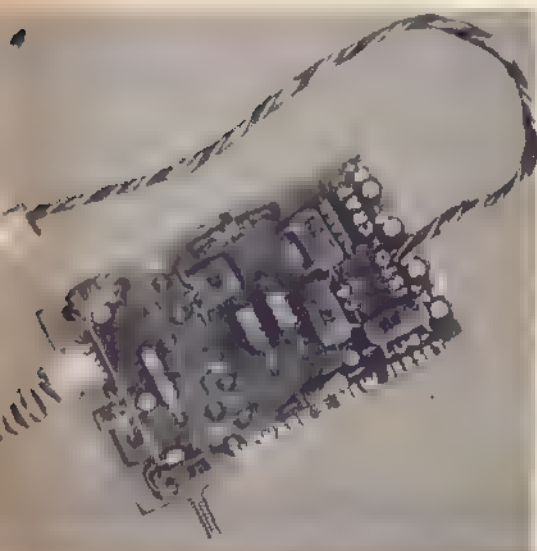
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Herkimer Tool & Model Works, Inc., Herkimer, New York, announces the availability of new 1955 catalog sheets on their complete product line. This includes three OK Streamline HO gauge train sets, eight HO Scale and eight HO Shorty Streamline passenger car kits, the complete line of OK Cub miniature engines and accessories, and the new Silhouette Oil Painting sets. Effective September 1, the price on the OK Power Kit changed from \$3.95 to \$4.45.

These catalog sheets for the fall season give full description and price information and are available upon request from the Herkimer Tool & Model Works, 78 Hartar Street, Herkimer, New York.

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The deBolt Model Engineering Co., Box 73, Williamsville, N. Y., advises that it has the following material available: literature on radio control line model kits (free); literature on radio control model kits (free); "Speed Notes" booklet on speed model flying (25¢); and Multi-Servo information booklet on R/C actuators (25¢).

Sterling Models, Belfield Avenue & Wister St., Philadelphia 44, Pa., offers a 12-page three-color illustrated and descriptive catalog of concern's entire model line. Send 10¢ to cover handling charge.

Hobby Model World

(Continued from page 44)

passed on. This mug is awarded on the vote of five members who have to agree that the guy goofed worthy of the award. John for some reason or another turned on his transmitter at a time when another guy was still flying, resulting in his crashing the other guy. Now this wasn't enough. The next weekend, the guy got his ship repaired and was flying it again... Yep, John turned his transmitter on and again crashed the same ship, so—John got the pot. But—he forgot it and left it at the field, and since they have a rule that the holder must be able to show the pot if he is asked by another Lark, the boys ganged up on him, put the pot safely away, then proceeded to John's to "have a look." It cost him 50 cents every time he couldn't show it when asked. We don't know how much it flattened him, but he is sure watching everyone for a goof so he can get rid of that mug.

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fuel leaking into your cabin between the wing and fuse is to set the wing on the fuse, lay wax paper over the crack, then tie your wing down. We saw Chuck Boyer do this and it really works.

Since the Larks fly single channel with all-you-can-put-in, a lot of guys were using Vic Nelson's system of cascading Bonner Compounds and motor escapement to good advantage. Chuck Boyer did about everything with his "Livewire," using this system to total 88½ points. Chuck used that fine Deltron receiver and transmitter, two Bonner Compounds and Bonner Motor to do all this flying. Dean Kenney finally found out what he was first in for he has now won the last four monthly meets the Larks have had in Multi. This time he totaled 120½ points and they were hard points. Judges John Curry and Doc Hauck were sure tight with their scoring. Dean used his "Ci-Co" with a RaCon 5 channel receiver and transmitter, home-made servos with microswitches and Bonner motor with a Torp .35 doing the pulling, and pull it did.

Commercial Topics. Trips down to Bonner Land and Nelson Ville revealed these demons hard at work. Bonner is engaged on something we just can't believe—a puppet for use on a coming TV program, the puppet doing everything a human being can with no overhead strings. Watch for it on the new Dick Tracy series. He was also hard at work on servos, we saw a German import which was really powerful and light. Bonner has the neatest, cleanest place we have ever visited. All work is spread out on paper towels, which are disposed of as soon as they just begin to look dirty. Precision is the byword at Bonner Land—he does the finest sheet metal work we have seen, no wonder his stuff works so good.

At Nelson Ville, the little Deltron equipment really impressed us, the new relay on the bottom with a Bonner case

over the receiver is real slick. Current change of over 3 mils was evident on any receiver you picked up. The transmitter also looked good—plenty of output, he gets the power to the antenna. Vic

showed us a little trick he always uses with his xmtr—that of holding the case against his body. The increased capacitance almost doubled his field strength. So you guys who use those Deltrons out



Which train set
FOR CHRISTMAS?



COMPLETE BUYERS' GUIDE TO MODEL TRAIN SETS...

IN DECEMBER ISSUE

Model railroading made easy

MODEL
TRAINS
MAGAZINE

Never before such a profusion of makes, types, sizes—how wisely will you choose? Do you want "O" gauge—or "S"—or "HO"? Which is suddenly the most popular? Do you want "two-rail" or "three-rail" ... A.C. or D.C.? Look the field over—be informed before you buy. Beside the complete Buyers' Guide, MODEL TRAINS gives you a wealth of helpful hints to make your train a real investment in model railroading pleasure. Get your copy of December MODEL TRAINS today!

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NEW ROTO- VALVE

UNIVERSAL EXHAUST THROTTLE

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- CLAMPS TO EXHAUST PORT

Actuated by servo or escapement for R/C
Third line for U-control

TWO MODELS

"A" FOR .15-.35 ENGINES
"B" FOR .35-.65 ENGINES
WRITE FOR FREE CATALOG

ONLY \$4.95

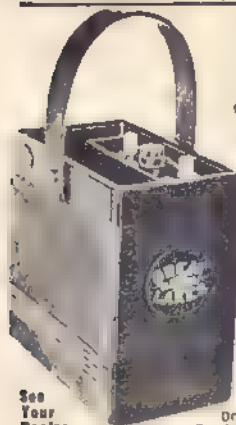
Postpaid with instructions. Make out check or M.O. payable to Roto-Valve Mfg. Co. No C.O.D.'s please

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PARTS

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24 HOUR SERVICE ON MOST ORDERS 30,000 ITEMS ALWAYS IN STOCK—ALL LEADING LINES

TROST

WHOLESALE ONLY DEALERS WRITE FOR CATALOG SHEETS

MODELCRAFT AND HOBBIES
3140 W. 43RD
CHICAGO 24

in your hands, you're losing power—it is quite possible that this is also true with other transmitters.

Those of you who use the air bleed system for two speed will find the Kading Go-Jets ideal. We have seen several in operation and that angled intake has a lot of advantages.

—Dick Everett

Check Cashing Problem. To show the power of the press when a Raytrol ad in this mag presented that concern's name spelled incorrectly, the outfit got a

CALENDAR of HOBBY MEETS MODEL and SHOWS

List your hobby club's public shows, exhibitions and contests here! There's no charge. Advise "YM" not less than 90 days in advance. Give telephone of contact man if possible. Send to "Calendar," c/o YOUNG MEN, 304 E. 45th St., New York 17, N. Y.

Address of contact man is in the same city as site of event unless otherwise specified. This publication does not assume responsibility for any errors in listing.

IND—Indianapolis, Nov. 12-20. Do-It-Yourself Hobby Show at State Fair Grounds. Box 6089.

CALIF—Inglewood, Nov. 13. Skywolves air-model team race. D. C. Crystal, 805 E. Palmer Ave., Compton.

CALIF—Fresno, Nov. 27. FGMC air model record trials. Jim Scheidt, 2225 Brown Ave.

ARIZ—Phoenix, Dec. 4. Model aircraft rodeo. Quentin Webster, 521 E. Camelback Rd.

TEXAS—El Paso, Dec. 4. Air-model record trials. Fred Lind, 1610 E. Yardell.

FLA—Miami, Dec. 30-Jan. 2. Second King Orange Internationals air-model meet. C. R. Quick, 1896 N.W. 36th St.

N.Y.—N.Y.C., April. 5th International Philatelic Exhibition at N. Y. Coliseum. Held every 10 years, 400,000 attendance anticipated. Special classes for those 10 to 13 and 14 to 18.

number of orders with checks made out—naturally enough—incorrectly. Laments Raytrol's manager, Luis R. Matos, "We

Starting Next Issue . . .

Auto. Aircraft and Boat
Design Competitions will
be combined into the new

"DESIGNS OF TOMORROW"

More Cash Awards!

are having difficulty in cashing the checks and money orders on account of said error."

Of course, they could change the name of the company to conform with our misspelling . . . but guess we'd better keep things straight by saying it's RAYTROL, 51 Hamilton Place, NYC 31.

Young Men

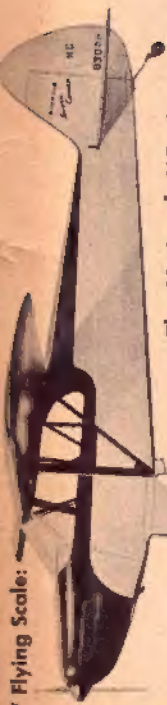
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While every precaution is taken to insure accuracy we cannot guarantee against the possibility of an occasional change or omission in the preparation of this December 1955 index.

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\$2.95
The Nationals Winning
PIPER "SUPER CRUISER"

.035 to .049 Engines for Free-Flight
.049 to .099 Engines for Controlline
35" Wingspan

Completely re-designed to match its Nationals winning record with "1/2 A" engines, modern pre-fabrication and simplified sheet balsa construction techniques. This design will soar to honors in the contest season ahead!

These full One-inch Scale models have proven themselves on the contest field.

FAIRCHILD 24 "RANCHER"
STINSON SENTINEL "L-5"
Controlline -
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CULVER "V"
Each - **\$2.50**

Cessna L-19

Free-Flight Gas -

"BIRD DOG"

"SUPER CADET"

CESNA "180" Each - **\$2.95**

THIS CHRISTMAS -

Powered Model Boats
Give a



Chris-Craft
"COBRA"

- Full Size Plans with R.C. Details
- Die-Cut Mahogany Veneer, Balsa, Plywood
- Celluloid, Deck Hardware, Decals
- Sanded Decking

Build this big Mahogany planked scale replica of Chris-Craft's 1955 Sport Boat. Engine Compartment completely separated from optional Radio Control gear.

\$9.95

.09 to .35 Engines -
1 1/2" = 1' Scale - 31 1/2" Long



Chris-Craft
32' CRUISER

NEVER ANYTHING LIKE IT...A 32" FORMED PLASTIC HULL!

- For up to a .29 Gas Engine or two Miniature Electric Motors.
- \$14.95** RADIO CONTROL OPTIONAL!
- Formed Plastic Cabin with Mahogany Overlay
- Cast Marine Deck Fittings, Authentic Decals
- Full Size Plans, R.C. Installation Details
- Die-Cut Balsa and Mahogany, Celluloid, Etc.

At your Local Dealer or via Railway Express Collect.



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ZILCH "X-PENDABLE"

Newest in Combat Stunt -

For .19 to .35 Engines - 38" Wingspan
Kit includes all Pre-fabricated Wood Parts; Complete Controlline Hardware; Metal Landing Gear; Rubber Wheels; and FULL SIZED PLANS, detailed as only Berkeley details them.



\$4.95
"P-40 WARHAWK"

For .19 to .35 Engines - 45" Wingspan

Featuring: METAL COWL -
FLYING TIGER DECALS - STUNT FLAPS



Kit...

North American "AT-6 TEXAN"
(U.S. Navy Designation SNJ-5)
For .19 to .35 Engines - 31" Wingspan

Authentic and complete down to both Army and Navy decals, the AT-6 is one of the most popular kits of all time. Performance is excellent.



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CURTISS HAWK "P-6E"

For .09 to .15 Engines - 24" Wingspan
Metal Cowl, Metal Wheel Pans; Colorful Decals



\$6.95
North American "AJ-1 SAVAGE"

For two .045 to .099 Engines plus Jetex 100, 200 or Jetmaster 150 unit, for exact scale power.



'CUSTOM PRIVATEER'

GIANT AMPHIBIOUS N.A.C.A.

"LONG PLANING HULL" FLYING BOAT

For .45 to 1.20 Engines - 114" Wingspan (9 1/2" Fuel)
Weight with R.C. - 9 1/2 lbs. (15.2 oz. Loading)

1440 Sq. In.
Wing Area

\$19.95

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Free-Flight

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Treasured as a Christmas gift, Radio Control is a stepping stone toward aerodynamics and electronics. It is the gift with a future...

For Radio Control — Free-Flight — PAA-Load

"PIPER CUB J-3"

For .15 to .25 Engines—71" Span—2" Scale

Weight: 4 1/2 lbs. — 700 Sq. In. Wing Area — 14.2 oz. Loading

The "Piper Cub J-3" needs no introduction. Most famous of all light aircraft, it's a natural for R.C. or Free-Flight flying. The six foot span permits the extra R.C. installation that you dream about. This is a rugged, detailed, flight proven design. Full-Size Plan with R.C. installations, Authentic Decals, etc.

\$8.95

CESSNA "170"

For Radio Control — Free-Flight — PAA-Load
For .25 to .35 Engines—72" Span—2" Scale

Controlling your "Cessna 170" by Radio is a thrill you will not forget! Perfect in scale, rugged, stable in all attitudes, yet responsive in control, with good wind penetration qualities. The gear location is ideal for extended take-off runs. The larger than average size makes it easier to control in windy weather.

\$10.95



Radio Control — Free-Flight — Controline

Piper "TRI-PACER"

\$5.95

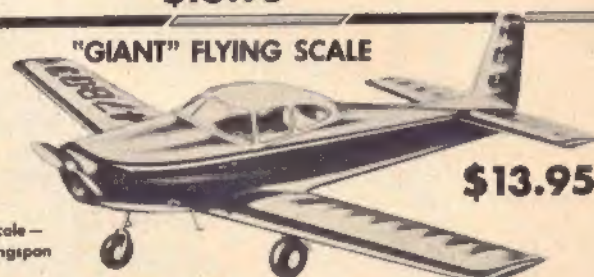
This perfect scale R.C. design may be built as a Free-Flight or Controline version if desired. Full Size Plans cover special details for all three versions. Flaps, elevator, rudder, motor and nose gear may be operated by R.C. Ailerons for trim, cabin door access to Radio. Highly Pre-fabricated, Authentic Decals.

1 1/2" = 1' Scale—44" Wingspan

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.035 to .075 Engines—Free-Flight

.075 to .15 Engines—Controline



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• Full Size Plans with Radio Control Details

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For .29 to .35 Engines Radio Control

For .23 to .29 Engines Free-Flight

For .29 to .65 Engines Controline

• Molded and Embossed Celluloid Canopy

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As easy to operate as a Home Portable!

100% Dependable Radio Control...

Tone Control on 27.225 mc. (Examination Free)
Easy to adjust, dependable, trouble free operation.

"TONE-AEROTROL"

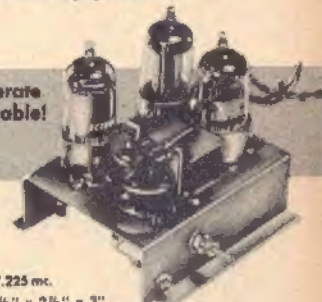
27.225 MC. TRANSMITTER

\$49.95

A High-Low Power Output control switch gives range control. Pilot light positively indicates operation. Metal carrying case with handle measures 8" x 10" x 10", weighs 15 1/2 pounds. Comes complete with Crystal and Whip Antenna. (Less Batteries)

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Designed by:
Dr. Walter Good



27.225 mc.

4 1/2 oz. 2 1/4" x 2 1/4" x 3"

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Low battery drain. Three tubes operate for long periods without any adjustment. Receiver complete with a 5000 Ohm relay

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Receiver is not apt to pick up R.F. Carrier from wrong transmitter as signal must be modulated at audio frequency. Perfect for R.C. Novice flyers.



Crystal Controlled Dust Core Tuned

27 mc.

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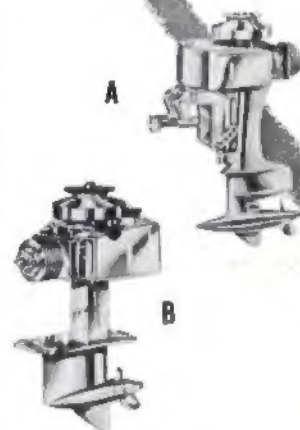


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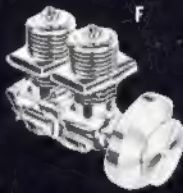
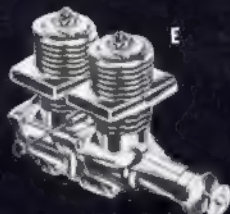
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Miniature Engine
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"OK" Engines available in a complete series from .049 to .35 . . . all proved champions in control line, free flight, radio control and stunt flying. Top flight champions in value and profit for over 19 years.

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Choose From Any of
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Results Look Like Original Creations!
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Now everyone can have all the fun of painting in oils — plus the satisfaction of having a completed painting that looks like an original.



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